

ENGINEERING CATALOG | LT EDITION





ParkUSA is now part of Northwest Pipe Company!

You can expect the same great line of innovative products, quality manufacturing, and responsive team service. This merger helps us meet the high demand for specialized products that ensure effective and compliant water management and will add more manufacturing plants to provide solutions for crucial water segments including wastewater products, stormwater, and water distribution.

LOCATIONS

CORPORATE HEADQUARTERS

Vancouver, Washington

WATER TRANSMISSION

Portland, Oregon

Tracy, California

Adelanto, California

Saginaw, Texas

Parkersburg, West Virginia

SLRC, Mexico

PERMALOK STEEL CASING PIPE

St. Louis, Missouri

PRECAST & INFRASTRUCTURE

Geneva Pipe & Precast

Salt Lake City, Utah

Orem, Utah

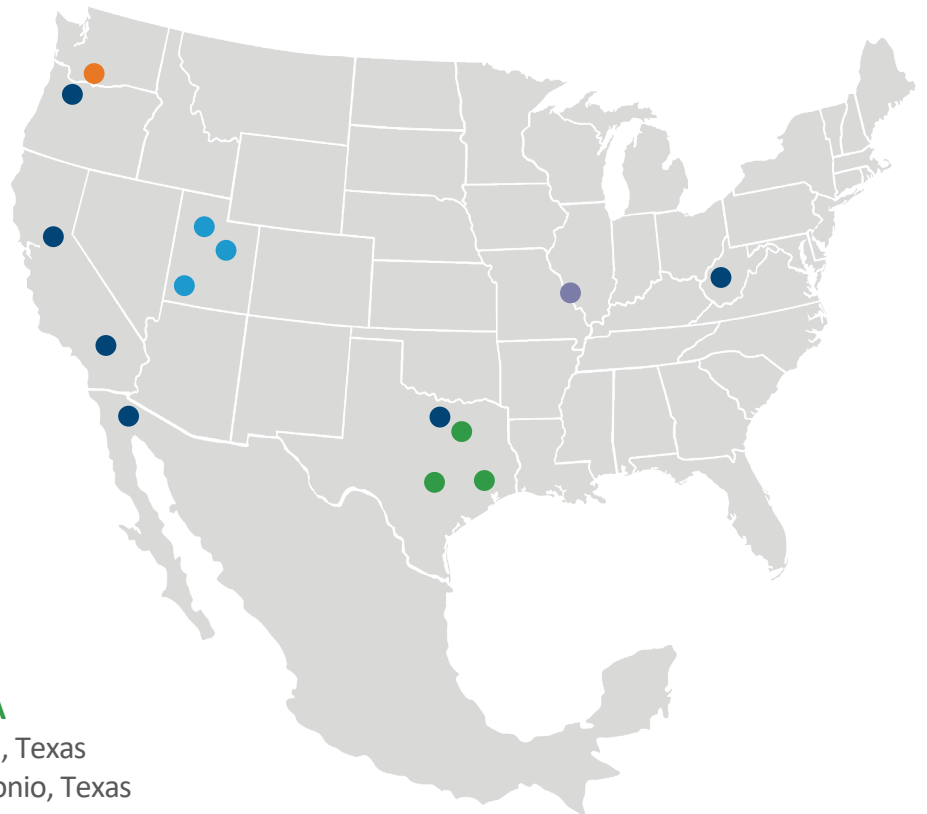
St. George, Utah

ParkUSA

Houston, Texas

San Antonio, Texas

Ferris, Texas





ENGINEERING CATALOG

LT EDITION

REVISION 5.1

Domestic Water Systems
Fire Water Systems
Stormwater Quality
Reclaim Water
Wastewater Systems
Fuel Storage Systems

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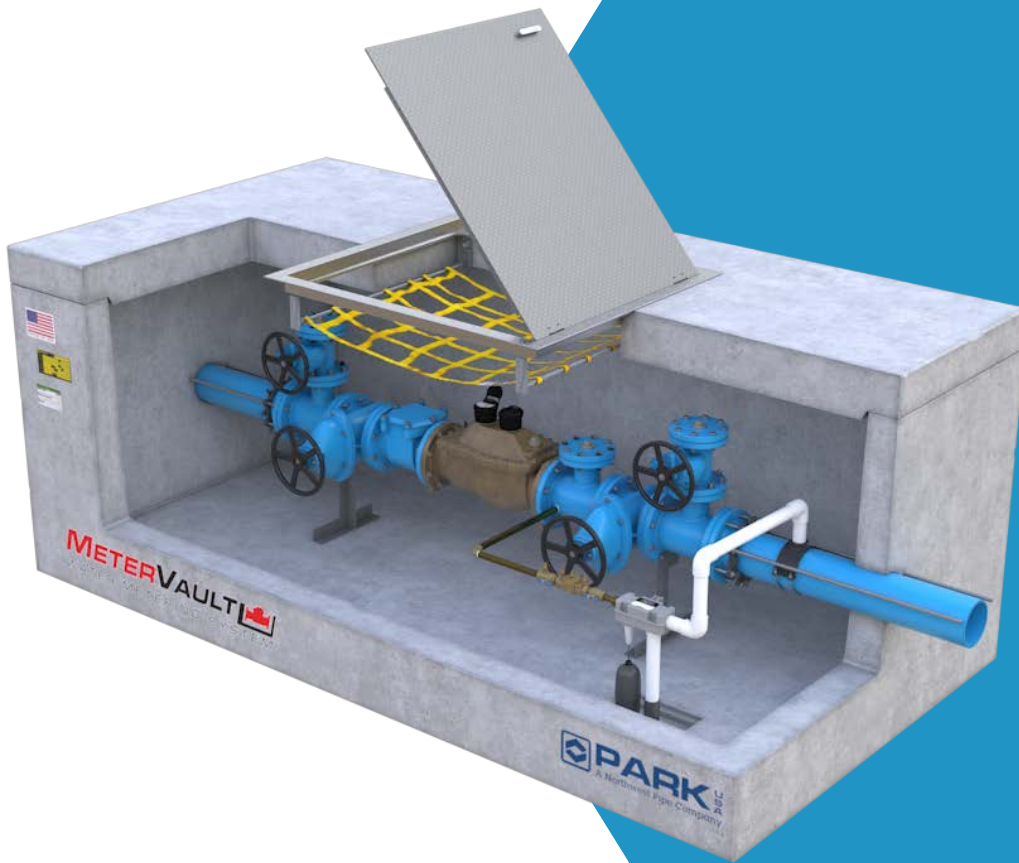
Domestic &
Fire Water

Stormwater
Quality

Wastewater
Systems

Fuel Storage
Systems

METER[®] WATER METERING SYSTEM VAULT



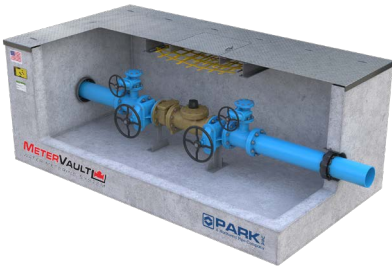
PARK
USA
A Northwest Pipe Company

ENGINEERING FACTS

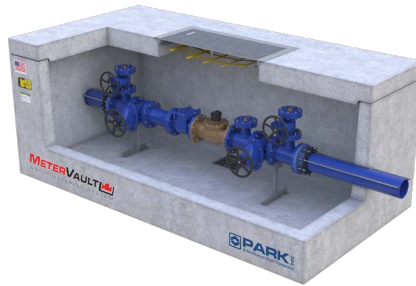
GENERAL INFORMATION

The ParkUSA Water Meter Assembly is a product designed to monitor and measure water usage. Clean water is a valuable resource to which Americans have become dependent for all aspects of personal, recreation, and business activities. The water originates from either below ground or surface water sources. Water utilities process and distribute the water via underground water mains. Utility companies charge customers for their water usage. To monitor and meter water usage, water meters are used to record this information. The water meter is generally located near the property line of the end-user's facility. The meter is installed in a concrete vault for protection and accessibility.

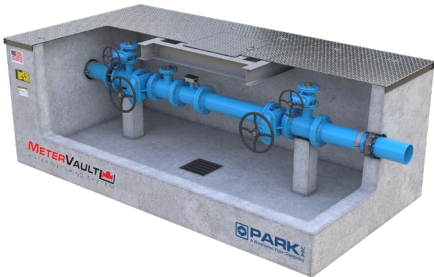
METERVAULT MODELS



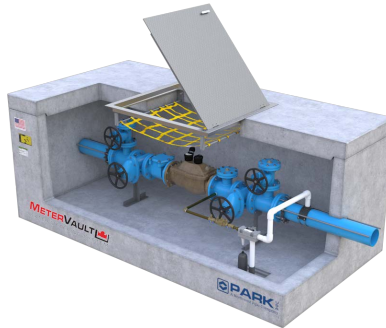
Positive displacement water meter



Turbine water meter



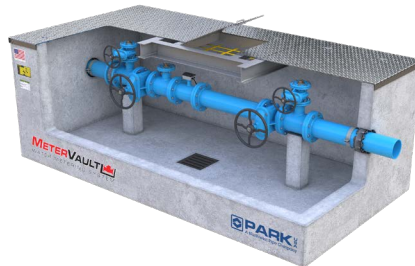
Propeller water meter



Domestic water meter



Fire rated water meter



Electromagnetic water meter

FEATURES

- Various Models for Different Applications Available
- Completely Pre-assembled for Easy Installation
- Easy Maintenance
- Precast Concrete Containment Vault Construction
- Long-Lasting and Dependable Service
- Only Certified Equipment Used for Construction

There are various applications for water meter assemblies, including:

- Domestic Water: Potable water for drinking and general use
- Fire Service: Used for fire prevention systems including standpipe and sprinkler systems
- Fire/Domestic Service: Combination domestic and fire service
- Irrigation: Used for landscape and irrigation water service
- Process: Water meters can be used for AVAC and manufacture services

MODELS

Combination Water Service Meter

The Combination Water Service Meter is designed for applications where fire service and drinking water supplies are fed by a single line. The design of the Combination Meter combines low-slow sensitivity of disc meters with high-flow capacity of turbine meters for an extremely wide flow range. The Combination Meter is designed to measure both domestic and fire service water usage through a single water line. This meter is required to be Underwriters Laboratory (UL) Listed and Factory Mutual (FM) Approved for fire service.

Applications for Combination Water Meters include; hotels, hospitals, schools, and other large water customers requiring water service through a single line.

Compound

Compound Meters are a combination of a positive displacement meter and a turbine meter designed for high metering accuracy where extremely large variations in flow are anticipated. The Compound Meter is typically installed in schools, hospitals, hotels, shopping centers, and other installations where flow demands vary from fractional gallons to large peak-hour demands. Compound Meters are available in sizes 2 inches through 8 inches.

Applications for compound Water Meters include; medium-sized motels, hotels, schools, public buildings, large apartments, condominium complexes, hospitals, and other customers that experience both high and low water demand.

Electromagnetic

Electromagnetic Water Meters (Magmeters) are designed for measuring potable and non-potable cold water. Magmeter are used on applications such as municipal water service, reclaimed water, raw sewage, or when the meter location is difficult to reach. The Magmeter has a flow tube design that is completely non-intrusive and maintenance-free. Whereas, other meters can clog and require frequent maintenance when used with solids laden, Magmeters are full port to allow flow.

Electromagnetic Water Meters are available up to 54-inch dia. The electromagnetic flow measurement technology can be used in water, wastewater, and industrial applications.

Positive Displacement

Positive Displacement Meters contain a hermetically sealed register, magnetic drive, and positive displacement measuring chamber. They are used to measure the low flows typically associated with residential and light commercial applications. Available sizes range from 5/8 inch through 2 inches.

Propeller Meters

Propeller Meters are designed for measuring potable and non-potable cold water. The Propeller Meter is recommended for applications where flows are constant within a limited range, and low flow does not occur. The Propeller Meter is an economical and versatile flow measurement solution for a wide range of water applications, and can be used on dirty water flows.

Our Propeller Meters are available from 3 inches up to 36 inches dia. Applications for the Propeller include agricultural and turf irrigation, HVAC, marine systems, and municipal water and wastewater.

Turbine Water Meter

Turbine Water Meters utilize a vane turbine element in the water flow stream that rotates as water flows through the meter body. The Turbine Meter is designed for domestic or fire service applications where the flow is consistently moderate to high. For fire service applications, a fire turbine water meter with a UL/FM strainer is used. Turbine Meters are available in sizes 2 inches through 16 inches.

Meter Vault

The meter vault is manufactured from high strength precast concrete providing protection and accessibility to the meter and accessories. The vault should contain an access hatchway and safety net suitable for grade level entry. The hatchway should be constructed of corrosion resistant materials and designed for either pedestrian or vehicular traffic loading. The vault should have a recessed sump for pumping out any rainwater which may enter vault. An automatic meter reading (AMR) transmitter can be located in the vault cover to allow for remote meter reading.

Strainers

A strainer upstream of the meter is generally required on meters two inches and larger. The strainer provides protection to the meter by screening out debris which could damage the meter. The stainless-steel element is designed to improve the water flow stream profile entering the meter. This optimized flow profile ensures accurate registration regardless of the configuration on the meter installation. For fire service installations, the strainer must be UL Listed and FM Approved. The fire strainer is generally significantly larger than its domestic strainer counterpart.

Valves and By-Pass

To prevent water service interruption to the end-user, a by-pass line and valves for isolating the meter is incorporated to facilitate future meter calibration and maintenance. Some local water authorities may require that the by-pass valve be locked to prevent unauthorized water usage. The large screen element provides for less pressure drop across the strain because of the larger internal screen element.

OPERATION

Usually, water meters follow the same principle of operation. For example, on the positive displacement water meter, a known quantity of liquid within a small unit moves with the flow of water. They operate by repeatedly filling and emptying the unit. The flow rate of water is calculated based on the number of times the unit is filled and emptied. The meter also includes a piston or disc that triggers the motion of gears for recording the volume of liquid exiting the meter.

DESIGN CONSIDERATIONS

Meter vaults are constructed of quality precast concrete, Class I 4500 PSI @ 28 days. Pre-casting the concrete enclosure insures that all units achieve structural and physical uniformity. The units are structurally engineered for H-20 traffic loading if specified and can be buried without any need for any other structural protection.

MAINTENANCE

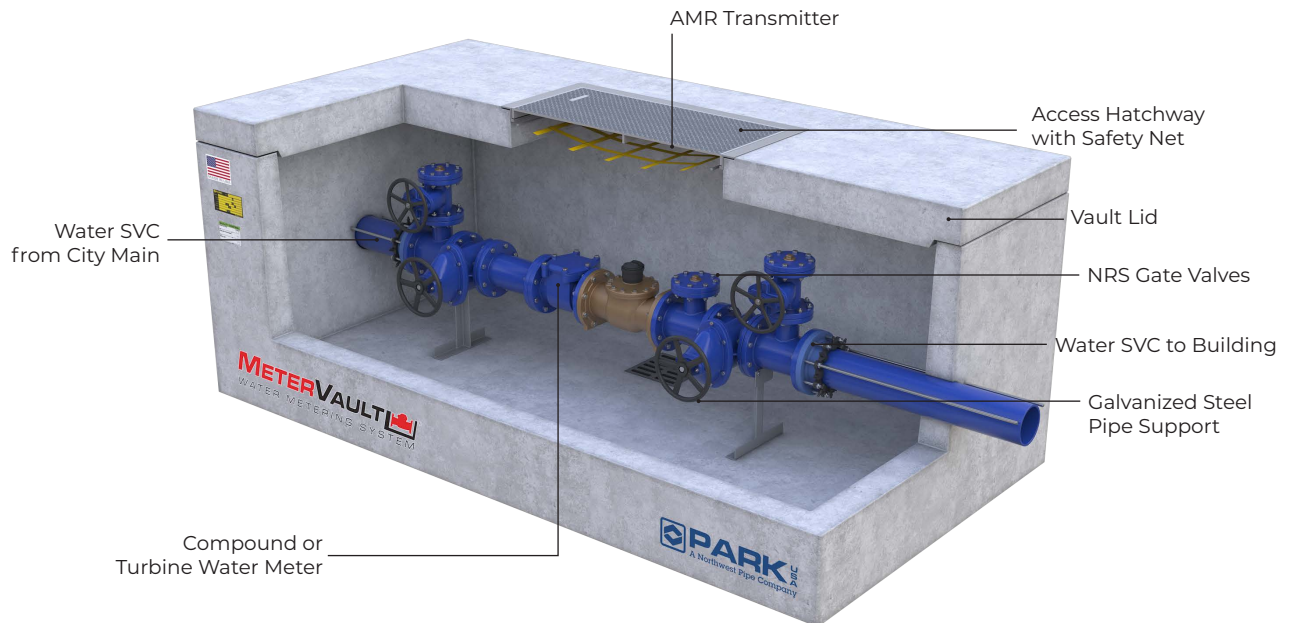
Water Meter Assemblies must be inspected annually with the results recorded on inspection report to be submitted to the local AHJ. If any essential part of the unit fails inspection, it must be repaired or replaced then pass a subsequent inspection.

SYSTEM COMPONENTS

The ParkUSA Water Meter Assembly presents the following components:

SIZING

When specifying a meter assembly for an application, the engineer should identify if the unit is to be used to meter water service for domestic water, fire service, combination, or irrigation. Then, the piping size must be verified on the corresponding plans. Current Water Meter Assemblies sizes are on following page.



WATER METER APPLICATIONS

Domestic & Fire Water

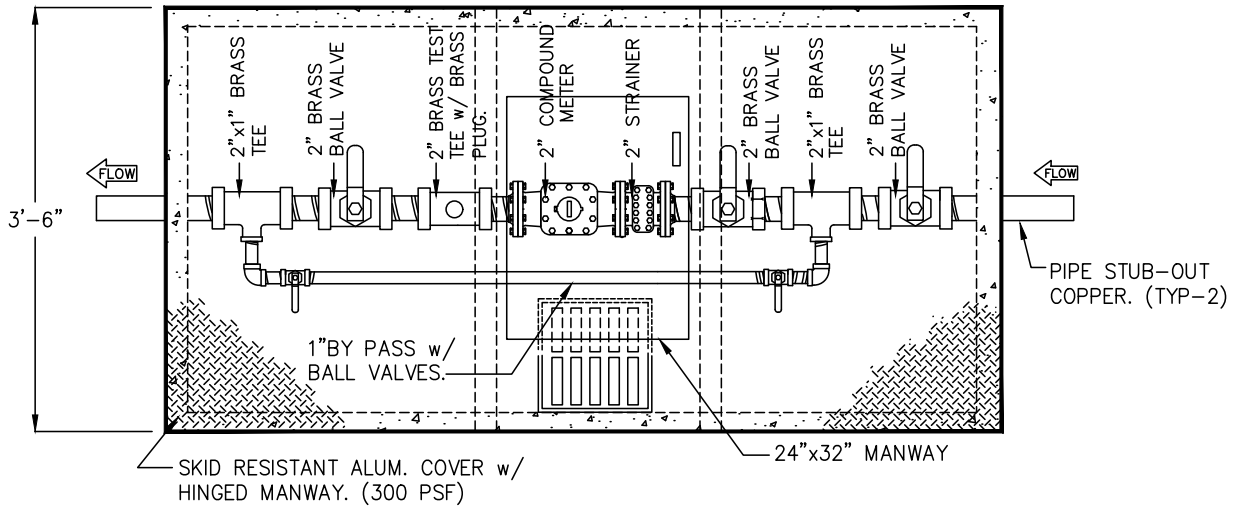
POSITIVE DISPLACEMENT	DEMAND FLOW RATES	MAX CONTINUOUS DEMAND
5/8" RESIDENCES, SMALL APARTMENTS, SMALL BUSINESSES	20 GPM	10 GPM
3/4" LARGE RESIDENCES, SMALL TO MEDIUM APARTMENTS	30 GPM	15 GPM
1" MEDIUM APARTMENTS, BEAUTY PARLORS, BARBER SHOPS, SMALL MOTELS, SERVICE STATIONS, SMALL BUSINESSES, INDUSTRIAL PROCESSES	50 GPM	25 GPM
1 1/2" MEDIUM MOTELS, HOTELS, LARGE APARTMENTS, SMALL INDUSTRY, SMALL PROCESSING PLANTS	100 GPM	50 GPM
2" LARGE HOTELS, MOTELS, APARTMENT COMPLEXES, INDUSTRIAL PLANTS, PROCESSING PLANTS	160 GPM	80 GPM

TURBINE WATER METER	LOW FLOW	HIGH FLOW	USE
2" TURBINE METER	4 GPM	190 GPM	MEDIUM TO LARGE HOTELS, MOTELS, LARGE APARTMENT COMPLEXES, INDUSTRIAL PLANTS, PROCESSING PLANTS, IRRIGATION
3" TURBINE METER	5 GPM	435 GPM	METER LARGE HOTELS, MOTELS, INDUSTRIAL PLANTS, PROCESSING PLANTS, IRRIGATION
4" TURBINE METER	15 GPM	750 GPM	LARGE INDUSTRIAL & PROCESSING PLANTS, IRRIGATION, REFINERIES, PETROCHEMICAL PUMP DISCHARGE, FIRE SERVICE
6" TURBINE METER	30 GPM	1,350 GPM	LARGE INDUSTRIAL MANUFACTURING & PROCESSING PLANTS, IRRIGATION, PUMP DISCHARGE, FIRE SERVICE
8" TURBINE METER	50 GPM	2,800 GPM	INDUSTRIAL, MANUFACTURING, PROCESSING PLANTS, PUMP DISCHARGE, FIRE SERVICE
10" TURBINE METER	75 GPM	4,200 GPM	INDUSTRIAL, MANUFACTURING, PROCESSING PLANTS, PUMP DISCHARGE, FIRE SERVICE
12" TURBINE METER	65 GPM	6,200 GPM	INDUSTRIAL, MANUFACTURING, PROCESSING PLANTS, PUMP DISCHARGE, FIRE SERVICE

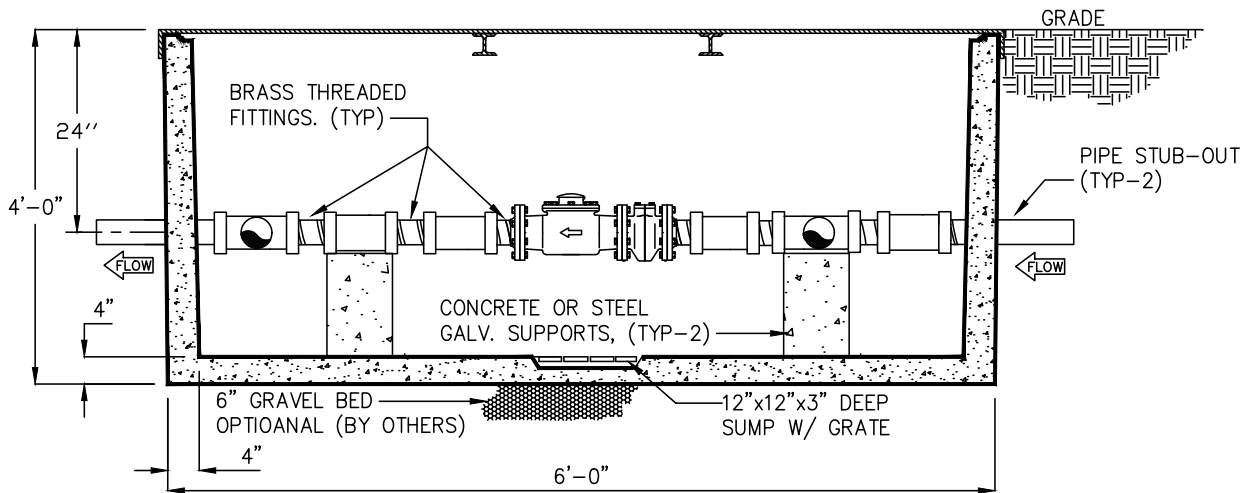
COMPOUND METER	OPERATING RANGE	MAX CONTINUOUS DEMAND
2" COMPOUND METER	1/2" TO 170 GPM	170 GPM
3" COMPOUND METER	1/2" TO 450 GPM	400 GPM
4" COMPOUND METER	3/4" TO 1,000 GPM	800 GPM
6" COMPOUND METER	3/4" TO 2,000 GPM	1,500 GPM
8" COMPOUND METER	2 1/2" TO 4,500 GPM	3,500 GPM

COMBINATION WATER METER	OPERATING RANGE	MAX INTERMITTENT DEMAND
4" COMBINATION METER	3/4" TO 1,200 GPM	1,500 GPM
6" COMBINATION METER	1 1/2" TO 2,500 GPM	3,100 GPM
8" COMBINATION METER	2" TO 4,000 GPM	5,000 GPM
10" COMBINATION METER	2" TO 6,500 GPM	8,000 GPM

MAGNETIC WATER METER	SIZES	OPERATING RANGE
MODEL SIZES	1/2" TO 86" DIA	6 TO 602,000 GPM



PLAN VIEW



ELEVATION

Specifications

CONCRETE: Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth. Gross empty weight of approximately 5,000 pounds.

REINFORCEMENT: Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.

ALUM. COVER: 1/4" aluminum skid-resistant floor plate welded to angle frame & hinged manway.

Engineering Data

Field excavation and preparation shall be completed prior to delivery of assembly. Use dimensional data as shown. Pipe, valves and fittings of the assembly are approved by one or more of the following associations:

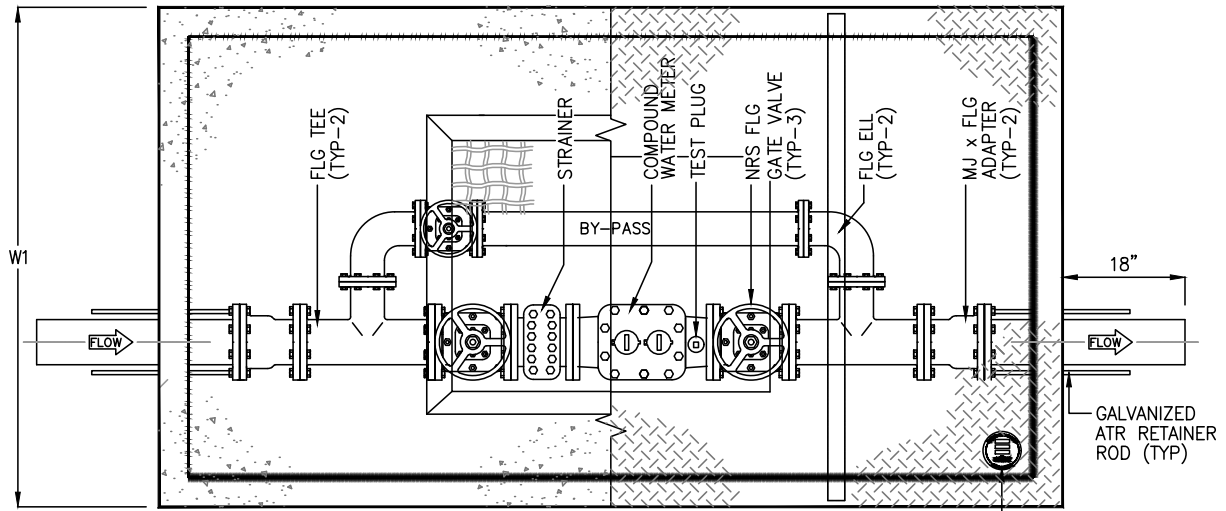


PROJECT:
CUSTOMER:
ENGINEER:
ORDER #:
PROJ #:
DATE:



2" WATER METER ASSEMBLY

PM	DRN	ENG	DWG. NO.	REV.
DATE	08/2017		DMC-2	A

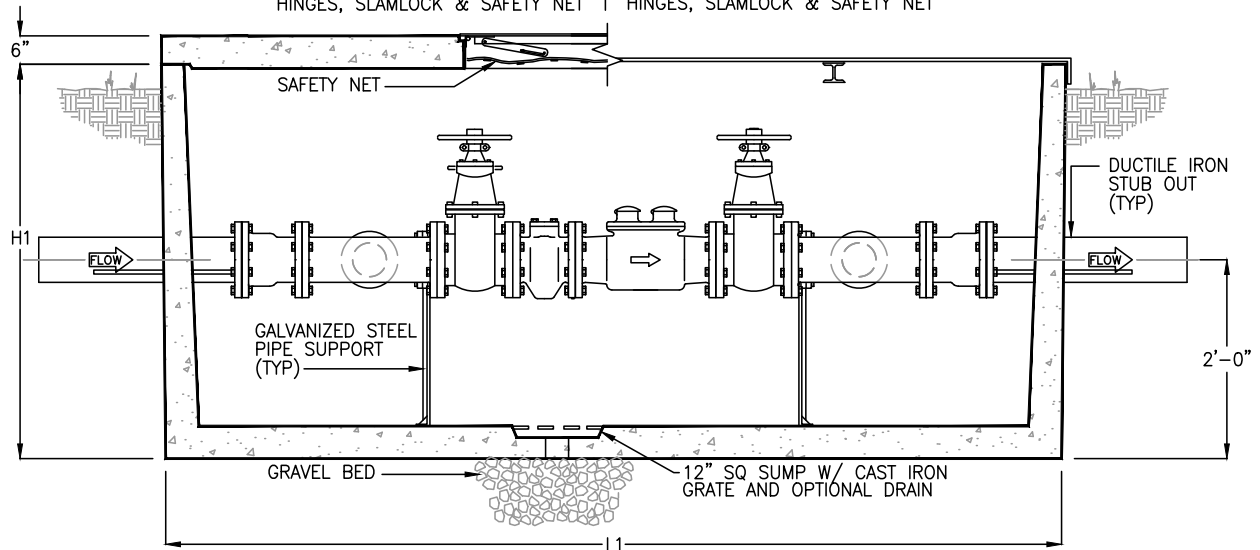


PLAN VIEW

MODEL	SIZE	BY PASS	L1	W1	H1	WEIGHT LBS
DMC-03	3"	2"	8'-8"	5'-0"	4'-0"	9,000
DMC-04	4"	2"	8'-8"	6'-0"	4'-0"	9,000
DMC-06	6"	3"	8'-8"	6'-0"	4'-0"	9,000

NAMEPLATE INDICATING:
MFG: ParkUSA
888-611-PARK
WWW.PARK-USA.COM
MODEL: DMC-AL-SL
DATE MANUFACTURED

CONCRETE LID w/ 30"x48" SINGLE LEAF ALUMINUM HATCH w/ SS HINGES, SLAMLOCK & SAFETY NET | GALVANIZED STEEL COVER w/ 24"x32" SINGLE LEAF HATCH w/ SS HINGES, SLAMLOCK & SAFETY NET



ELEVATION

© Park 2017

Specifications

- CONCRETE:** Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
- REINFORCEMENT:** Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.
- ACCESS COVER:** 1/4" steel skid-resistant floor plate welded to 3" angle frame with (2) 3"x2-3/8" I-beam supports. Hatch to be furnished with 316 stainless steel bolts and hinges
- ACCESS HATCHWAY:** 1/4" Aluminum diamond plate cover with extruded aluminum frame. Hatch to be furnished with 316 stainless steel slam lock & hinges.

Engineering Data

The meter assembly shall be factory assembled in vault & hydrostatically tested prior to delivery. Field excavation & preparation shall be complete prior to delivery. Pipe, valves and fittings of the assembly shall be approved by one or more of the following associations:

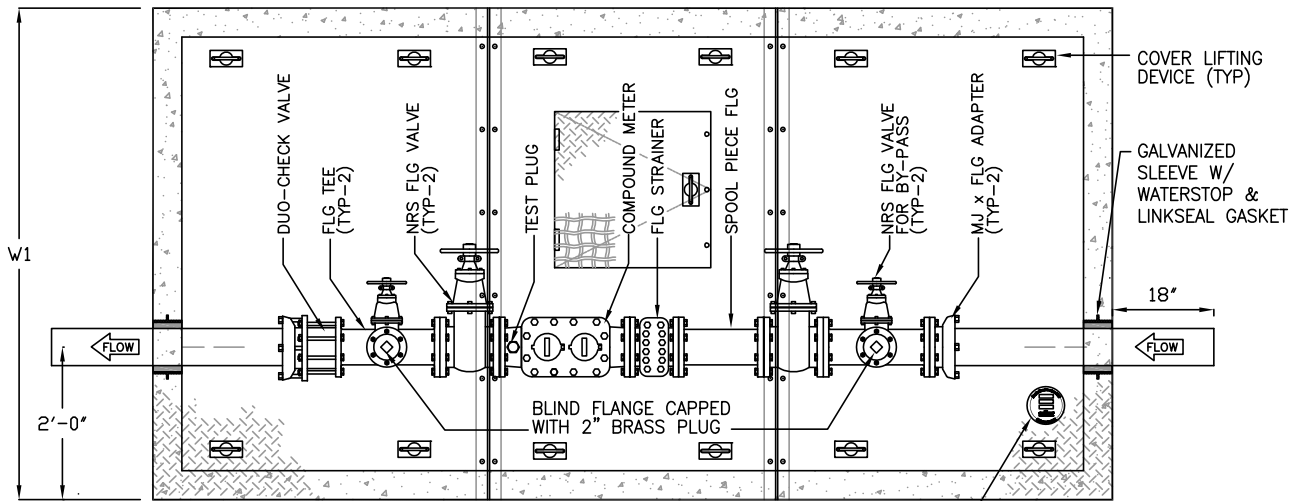


PROJECT: _____
 CUSTOMER: _____
 ENGINEER: _____
 ORDER #: _____
 PROJ #: _____
 DATE: _____



DOMESTIC COMPOUND WATER METER ASSEMBLY
MODEL DMC - 3" THRU 6"

PM	DRN	ENG	DWG. NO.	REV.
DATE	08/2017	DMC-AL-SL		A



MODEL	SIZE	BY PASS	L1	W1	H1	WEIGHT LBS
DMCCOH-03*	3"	2"	11'-6"	6'-0"	4'-3"	14,500
DMCCOH-04	4"	2"	11'-6"	6'-0"	4'-3"	15,000
DMCCOH-06	6"	4"	13'-6"	6'-0"	4'-3"	15,500
DMCCOH-08	8"	4"	13'-6"	6'-0"	4'-3"	15,500

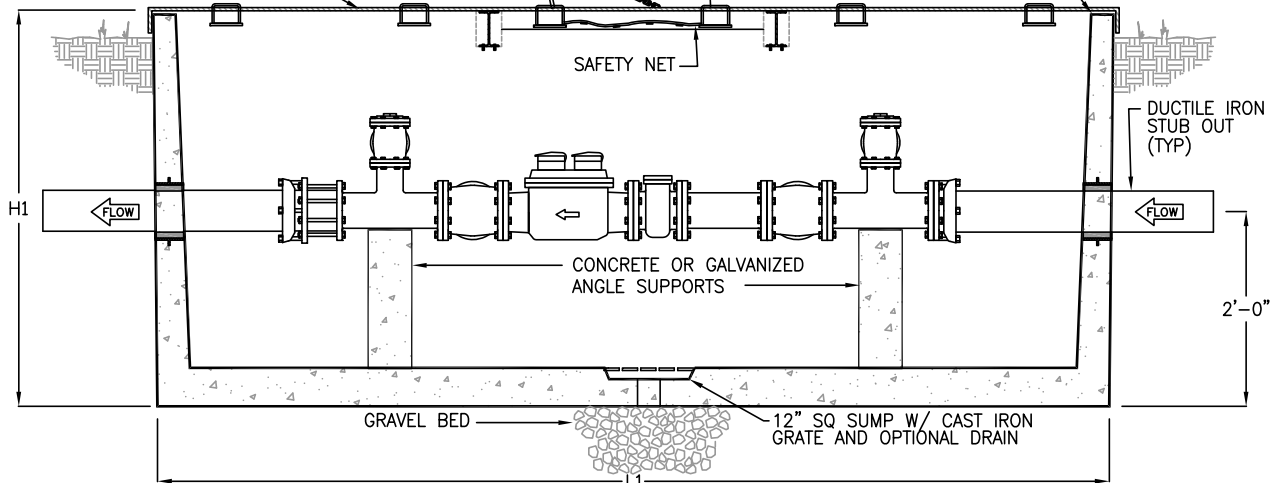
PLAN VIEW

* ON 3" METER ASSEMBLY INLET AND OUTLET WILL BE 4" PIPE

NAMEPLATE INDICATING:
MFG: ParkUSA
888-611-PARK
WWW.PARK-USA.COM
MODEL: DMCCOH-1
DATE MANUFACTURED

RAISED PLATE SECTIONAL STEEL COVER COVER WITH 24"X24" HINGED MANWAY HOT DIPPED GALVANIZED AFTER FABR. PER CITY OF HOUSTON SPECIFICATIONS. & PARK DWG CVCOH-1.

1/4"x6" CONTINUOUS NEOPRENE GASKET AROUND PERIMETER



ELEVATION

Specifications


- CONCRETE:** Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
- REINFORCEMENT:** Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.
- ACCESS COVER:** All steel fabrication shall be in accordance to AWA D1.1. Steel shall ASTM A36 carbon steel, and hot dipped galvanized after fabrication in accordance to ASTM A123. Standard cover is rated for 50 PSF.

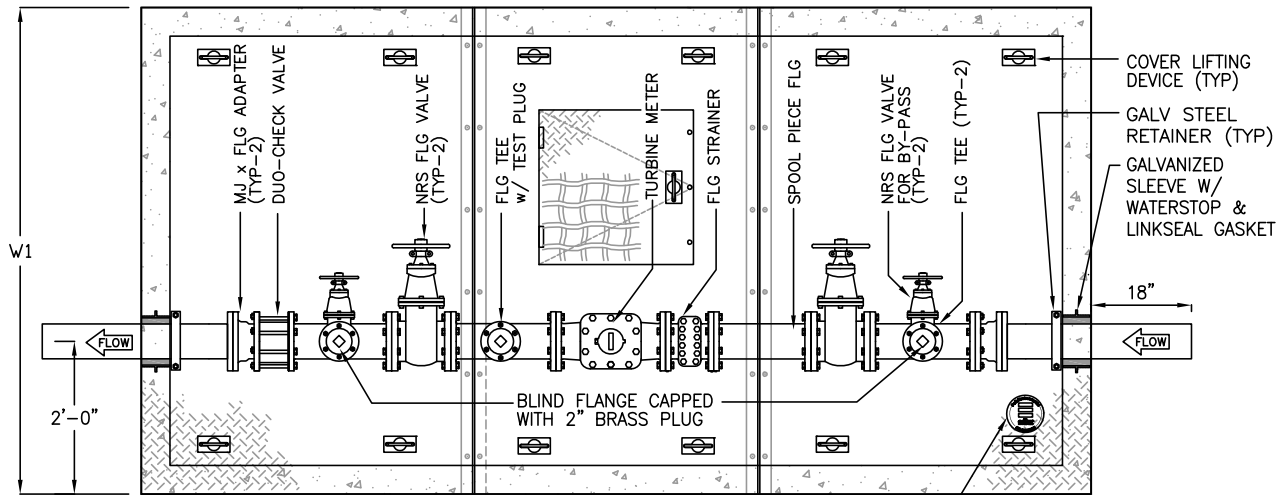
Engineering Data

The meter assembly shall be factory assembled in vault & hydrostatically tested prior to delivery. Field excavation & preparation shall be complete prior to delivery. Pipe, valves and fittings of the assembly shall be approved by one or more of the following associations:



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PROJECT: .					
CUSTOMER: .					
ENGINEER: .					
ORDER #: .	PROJ #: .				
DATE: .	LOCATION: .				
 888.611.PARK® www.ParkUSA.com					
DOMESTIC WATER COMPOUND METER ASSEMBLY MODEL DMCCOH - 3" THRU 6"					
PM	PC	DRN	ENG	DWG. NO.	REV.
DATE	07/2018			DMCCOH-1	A

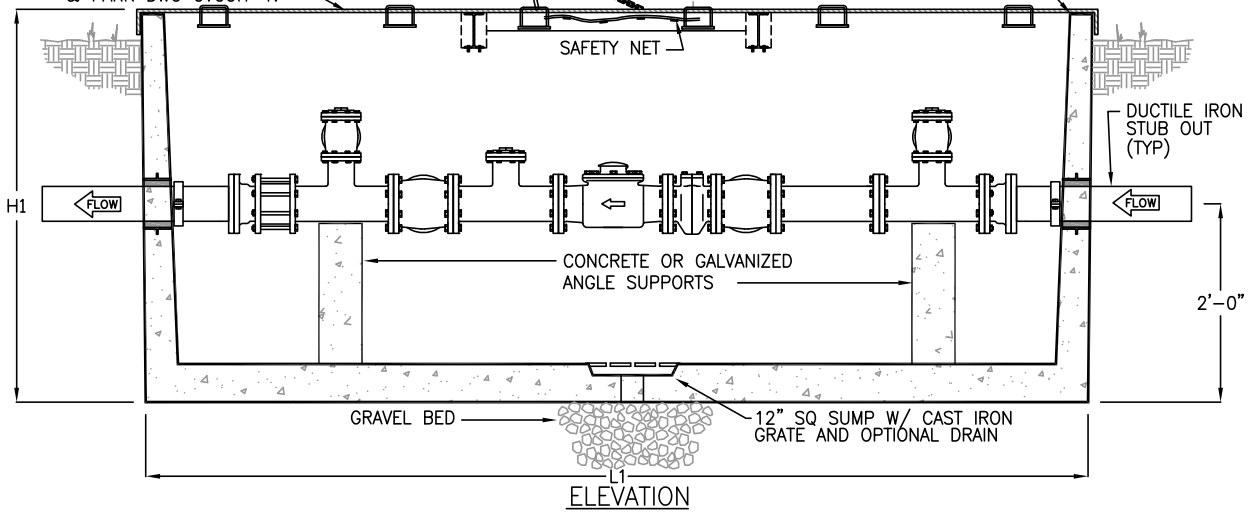


MODEL	SIZE	BY PASS	L1	W1	H1	WEIGHT LBS
DMTCOH-03	3"	2"	11'-6"	6'-0"	4'-3"	15,000
DMTCOH-04	4"	2"	11'-6"	6'-0"	4'-3"	15,000
DMTCOH-06	6"	4"	13'-6"	6'-0"	4'-3"	18,000
DMTCOH-08	8"	4"	13'-6"	6'-0"	4'-3"	20,000
DMTCOH-10	10"	4"	16'-0"	7'-0"	4'-6"	25,000

PLAN VIEW

NAMEPLATE INDICATING:
MFG: ParkUSA
888-611-PARK
WWW.PARK-USA.COM
MODEL: DMTCOH-1
DATE MANUFACTURED

RAISED PLATE SECTIONAL STEEL COVER
COVER WITH 24"X30" HINGED MANWAY
HOT DIPPED GALVANIZED AFTER FABR.
PER CITY OF HOUSTON SPECIFICATIONS.
& PARK DWG CVCOH-1.



ELEVATION

Specifications

- CONCRETE:** Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
- REINFORCEMENT:** Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.
- ACCESS COVER:** All steel fabrication shall be in accordance to AWA D1.1. Steel shall ASTM A36 carbon steel, and hot dipped galvanized after fabrication in accordance to ASTM A123. Standard cover is rated for 50 PSF.

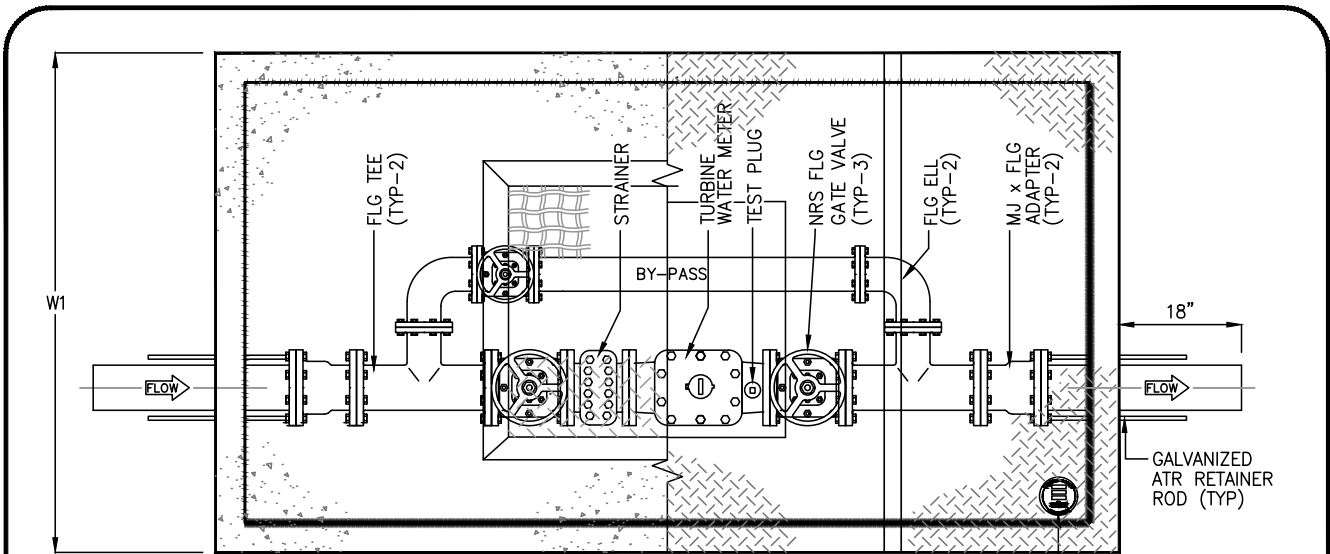
Engineering Data

The meter assembly shall be factory assembled in vault & hydrostatically tested prior to delivery. Field excavation & preparation shall be complete prior to delivery. Pipe, valves and fittings of the assembly shall be approved by one or more of the following associations:



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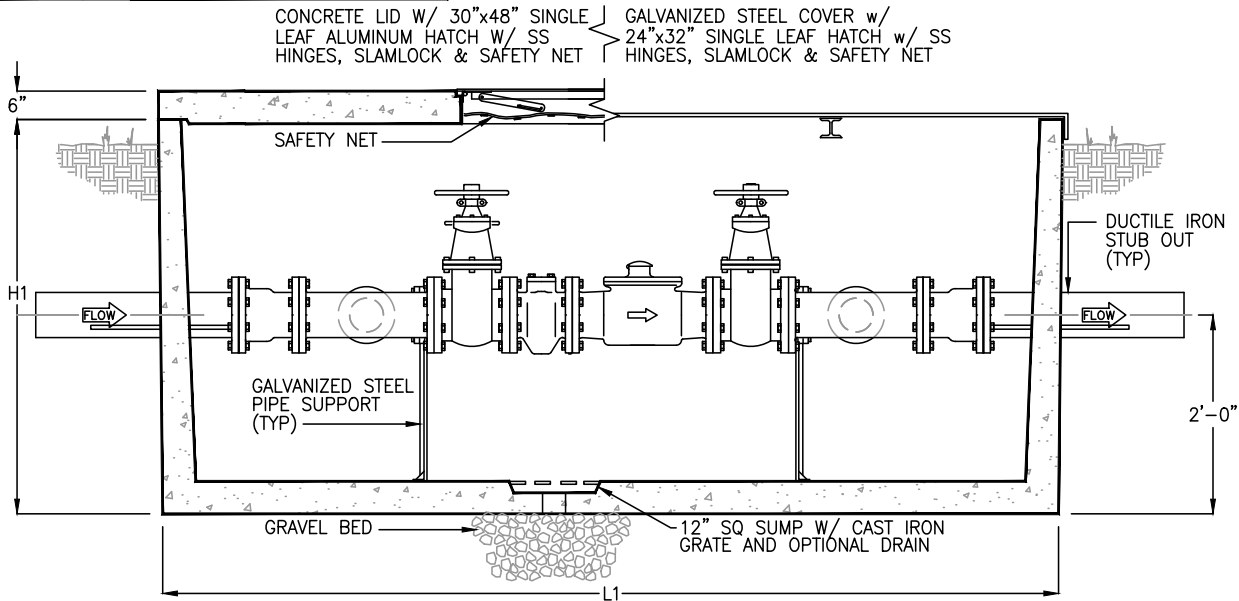
PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: .	LOCATION: .
DOMESTIC WATER TURBINE METER ASSEMBLY MODEL DMTCOH - 4" THRU 10"	
PM	PC
DRN	ENG
DWG. NO. DMTCOH-1	
DATE 07/2018	REV. A



MODEL	SIZE	BY PASS	L1	W1	H1	WEIGHT LBS
DMT-03	3"	2"	8'-8"	5'-0"	4'-0"	9,000
DMT-04	4"	2"	8'-8"	5'-0"	4'-0"	9,000
DMT-06	6"	3"	11'-0"	6'-0"	4'-3"	9,000

PLAN VIEW

NAMEPLATE INDICATING:
MFG: ParkUSA
888-611-PARK
WWW.PARK-USA.COM
MODEL: DMT-AL-SL
DATE MANUFACTURED



ELEVATION

© Park 2017

Specifications

- CONCRETE :** Class 1 concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
- REINFORCEMENT:** Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.
- ACCESS COVER:** 1/4" steel skid-resistant floor plate welded to 3" angle frame with (2) 3"x2-3/8" I-beam supports. Hatch to be furnished with 316 stainless steel bolts and hinges
- ACCESS HATCHWAY:** 1/4" Aluminum diamond plate cover with extruded aluminum frame. Hatch to be furnished with 316 stainless steel slam lock & hinges.

Engineering Data

The meter assembly shall be factory assembled in vault & hydrostatically tested prior to delivery. Field excavation & preparation shall be complete prior to delivery. Pipe, valves and fittings of the assembly shall be approved by one or more of the following associations:

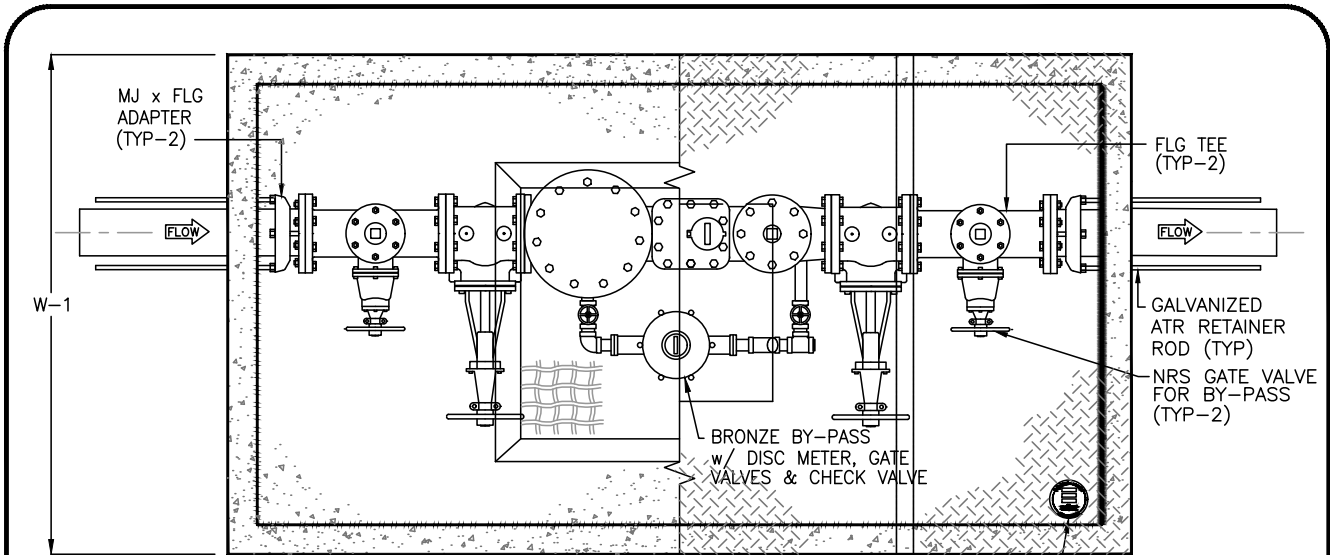


PROJECT:
CUSTOMER:
ENGINEER:
ORDER #:
PROJ #:
DATE:



DOMESTIC TURBINE WATER METER ASSEMBLY
MODEL DMT - 3" THRU 6"

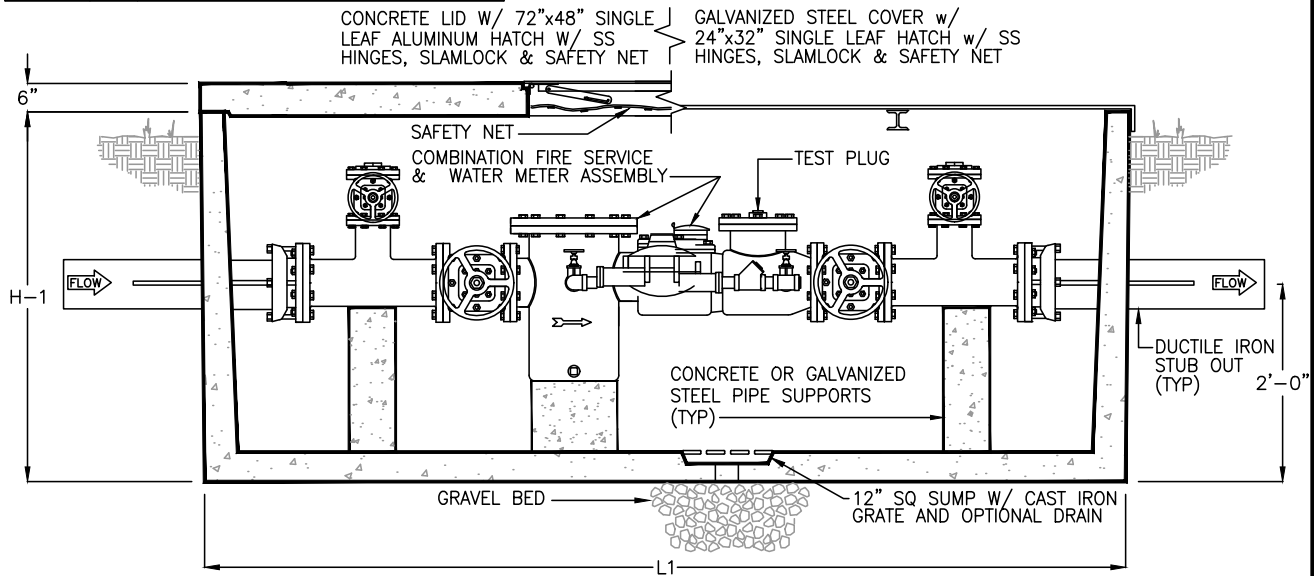
PM	DRN	ENG	DWG. NO.	REV.
DATE	08/2017	DMT-AL-SL		A



MODEL	SIZE	BY-PASS SIZE	L1	W1	H1	WEIGHT LBS
FMC-04	4"	2"	11'-6"	6'-0"	4'-6"	18,000
FMC-06	6"	3"	11'-6"	6'-0"	4'-9"	18,000
FMC-08	8"	4"	13'-6"	6'-0"	4'-9"	20,000
FMC-10	10"	4"	16'-0"	7'-0"	5'-0"	40,000

PLAN VIEW

NAMEPLATE INDICATING:
MFG: ParkUSA
888-611-PARK
WWW.PARK-USA.COM
MODEL: FMC-AL-SL
DATE MANUFACTURED



ELEVATION

© Park 2017

Specifications

CONCRETE: Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.

REINFORCEMENT: Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.

ACCESS COVER: 1/4" steel skid-resistant floor plate welded to 3" angle frame with (2) 3"x2-3/8" I-beam supports. Hatch to be furnished with 316 stainless steel bolts and hinges

ACCESS HATCHWAY: 1/4" Aluminum diamond plate cover with extruded aluminum frame. Hatch to be furnished with 316 stainless steel slam lock & hinges.

Engineering Data

The meter assembly shall be factory assembled in vault & hydrostatically tested prior to delivery. Field excavation & preparation shall be complete prior to delivery. Pipe, valves and fittings of the assembly shall be approved by one or more of the following associations:

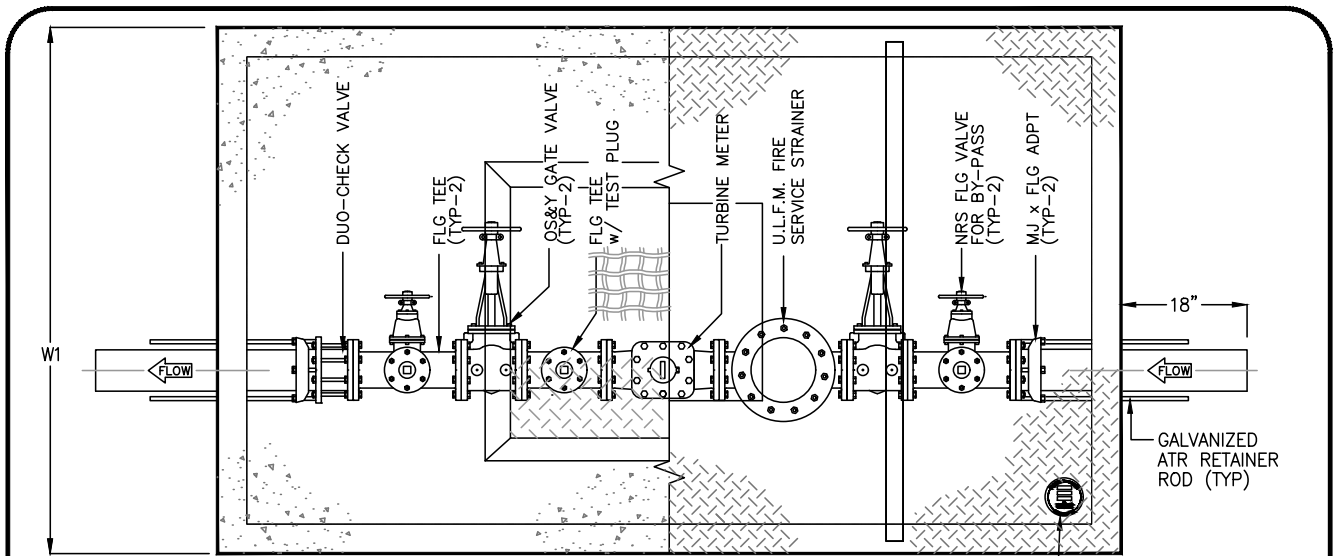


PROJECT: _____
 CUSTOMER: _____
 ENGINEER: _____
 ORDER #: _____
 PROJ #: _____
 DATE: _____



FIRE & DOMESTIC COMBINATION WATER METER ASSEMBLY
MODEL FMC - 4" THRU 10"

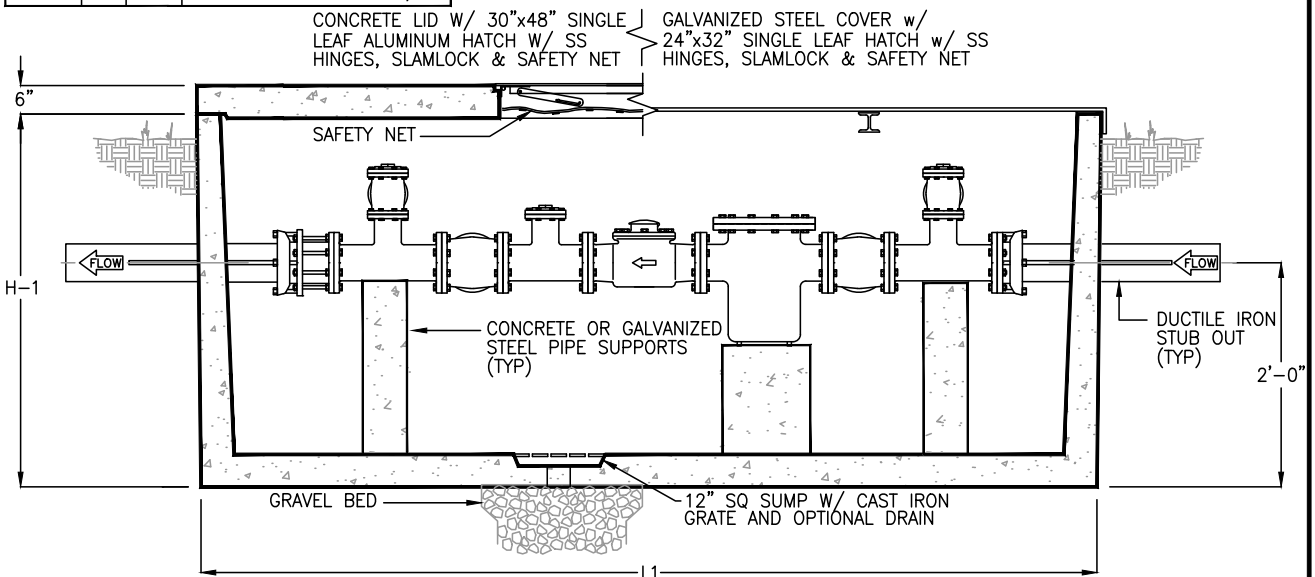
PM	DRN	ENG	DWG. NO.	REV.
DATE	08/2017	FMC-AL-SL		A



PLAN VIEW

NAMEPLATE INDICATING:
MFG: ParkUSA
888-611-PARK
WWW.PARK-USA.COM
MODEL: FMT-AL-SL
DATE MANUFACTURED

MODEL	SIZE	BY PASS	L1	W1	H1	WEIGHT LBS
FMT-03	3"	2"	7'-10"	4'-4"	4'-0"	14,500
FMT-04	4"	2"	8'-8"	5'-0"	4'-0"	15,000
FMT-06	6"	4"	11'-0"	6'-0"	4'-3"	19,500
FMT-08	8"	4"	13'-0"	7'-0"	4'-6"	20,000
FMT-10	10"	4"	13'-0"	7'-0"	4'-3"	25,000



ELEVATION

© Park 2017

Specifications

- CONCRETE:** Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
- REINFORCEMENT:** Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.
- ACCESS COVER:** 1/4" steel skid-resistant floor plate welded to 3" angle frame with (2) 3"x2-3/8" I-beam supports. Hatch to be furnished with 316 stainless steel bolts and hinges
- ACCESS HATCHWAY:** 1/4" Aluminum diamond plate cover with extruded aluminum frame. Hatch to be furnished with 316 stainless steel slam lock & hinges.

Engineering Data

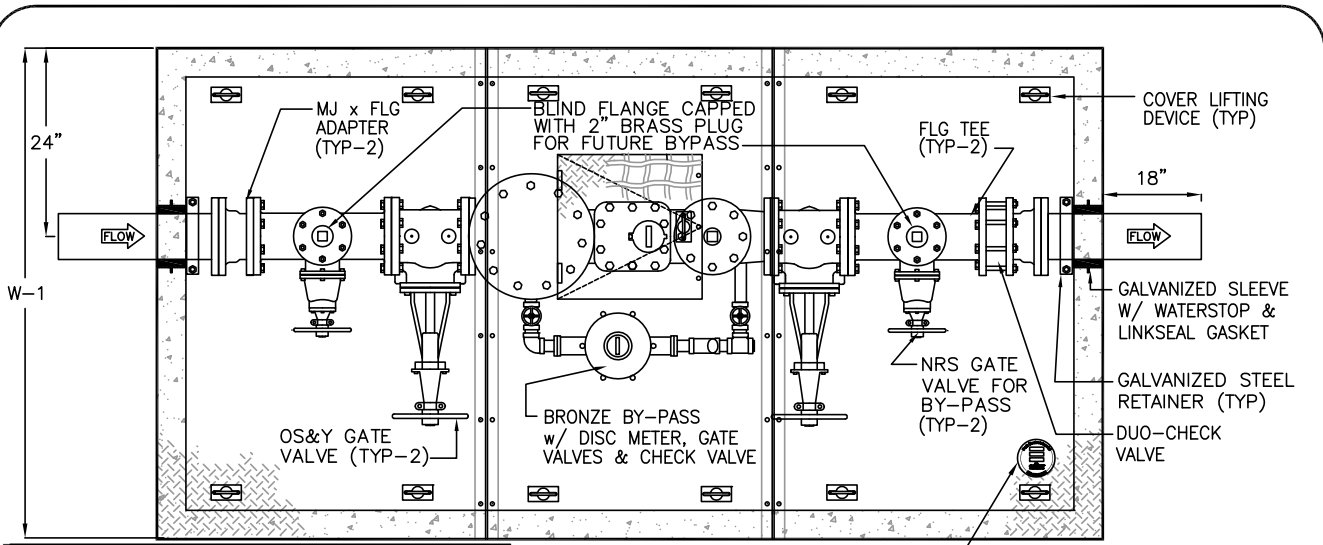
The meter assembly shall be factory assembled in vault & hydrostatically tested prior to delivery. Field excavation & preparation shall be complete prior to delivery. Pipe, valves and fittings of the assembly shall be approved by one or more of the following associations:



PROJECT:
CUSTOMER:
ENGINEER:
ORDER #:
PROJ #:
DATE:



FIRE SERVICE TURBINE WATER METER ASSEMBLY MODEL FMT - 3" THRU 10"			
PM	DRN	ENG	DWG. NO.
DATE	08/2017	FMT-AL-SL	
			REV. A

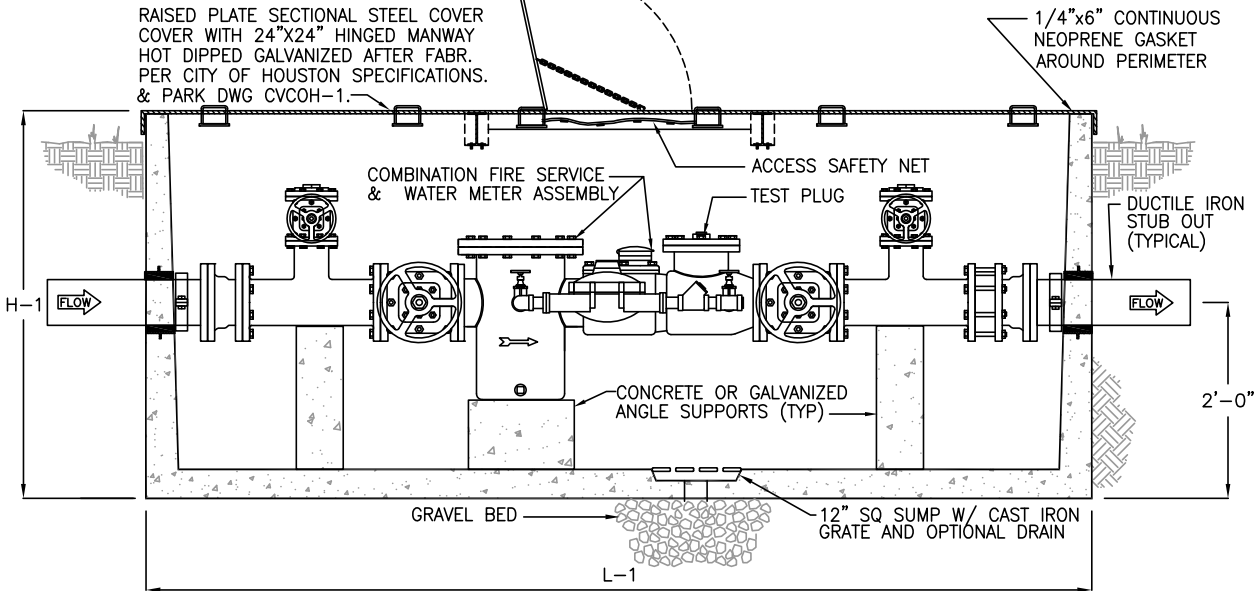


MODEL	COMBO METER SIZE	DISC METER SIZE	BY PASS	L1	W1	H1	WEIGHT LBS
FMCCOH-04	4"	1"	2"	11'-6"	6'-0"	4'-3"	14,500
FMCCOH-06	6"	1 1/2"	4"	11'-6"	6'-0"	4'-3"	19,500
FMCCOH-08	8"	2"	4"	13'-6"	6'-0"	4'-3"	20,000
FMCCOH-10	10"	2"	6"	16'-0"	7'-0"	4'-6"	25,000

PLAN VIEW

NAMEPLATE INDICATING:
MFG: ParkUSA
888-611-PARK
WWW.PARK-USA.COM
MODEL: FMCCOH-1
DATE MANUFACTURED

RAISED PLATE SECTIONAL STEEL COVER WITH 24"x24" HINGED MANWAY HOT DIPPED GALVANIZED AFTER FABR. PER CITY OF HOUSTON SPECIFICATIONS. & PARK DWG CVCOH-1.



ELEVATION

Specifications

- CONCRETE:** Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
- REINFORCEMENT:** Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.
- ACCESS COVER:** All steel fabrication shall be in accordance to AWA D1.1. Steel shall ASTM A36 carbon steel, and hot dipped galvanized after fabrication in accordance to ASTM A123. Standard cover is rated for 50 PSF.

Engineering Data

The meter assembly shall be factory assembled in vault & hydrostatically tested prior to delivery. Field excavation & preparation shall be complete prior to delivery. Pipe, valves and fittings of the assembly shall be approved by one or more of the following associations:



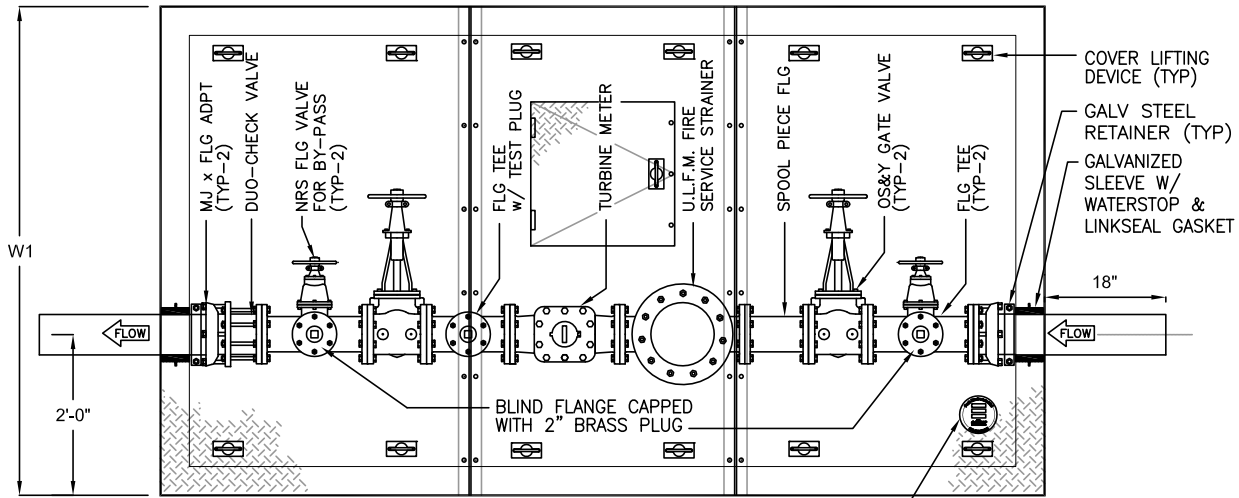
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PROJECT:	.
CUSTOMER:	.
ENGINEER:	.
ORDER #:	PROJ #:
DATE:	LOCATION:



FIRE/DOMESTIC COMBINATION METER ASSEMBLY
MODEL FMCCOH - 4" THRU 10"

PM	PC	DRN	ENG	DWG. NO.	REV.
DATE	07/2018	FMCCOH-1			A



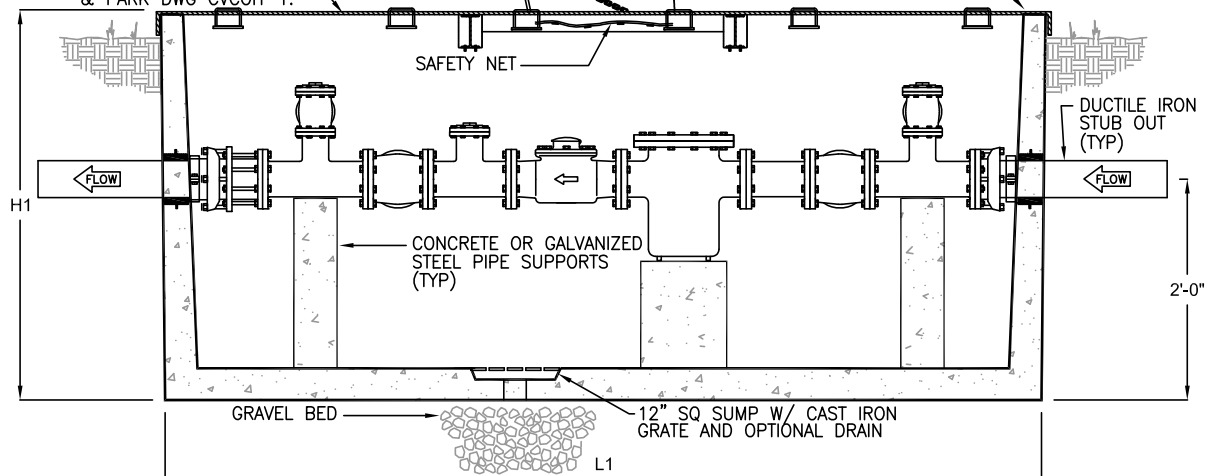
MODEL	SIZE	BY PASS	L1	W1	H1	WEIGHT LBS
FMTCOH-03	3"	2"	11'-6"	6'-0"	4'-3"	14,500
FMTCOH-04	4"	2"	11'-6"	6'-0"	4'-3"	15,000
FMTCOH-06	6"	4"	13'-6"	6'-0"	4'-3"	19,500
FMTCOH-08	8"	4"	13'-6"	7'-0"	4'-3"	20,000
FMTCOH-10	10"	4"	16'-0"	7'-0"	4'-3"	25,000

PLAN VIEW

NAMEPLATE INDICATING:
MFG: ParkUSA
888-611-PARK
WWW.PARK-USA.COM
MODEL: FMTCOH-1
DATE MANUFACTURED

RAISED PLATE SECTIONAL STEEL COVER WITH 24"X32" HINGED MANWAY HOT DIPPED GALVANIZED AFTER FABR. PER CITY OF HOUSTON SPECIFICATIONS & PARK DWG CVCOH-1.

1/4"x6" CONTINUOUS NEOPRENE GASKET AROUND PERIMETER



ELEVATION

Specifications

- CONCRETE:** Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
- REINFORCEMENT:** Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.
- ACCESS COVER:** All steel fabrication shall be in accordance to AWA D1.1. Steel shall ASTM A36 carbon steel, and hot dipped galvanized after fabrication in accordance to ASTM A123. Standard cover is rated for 50 PSF.

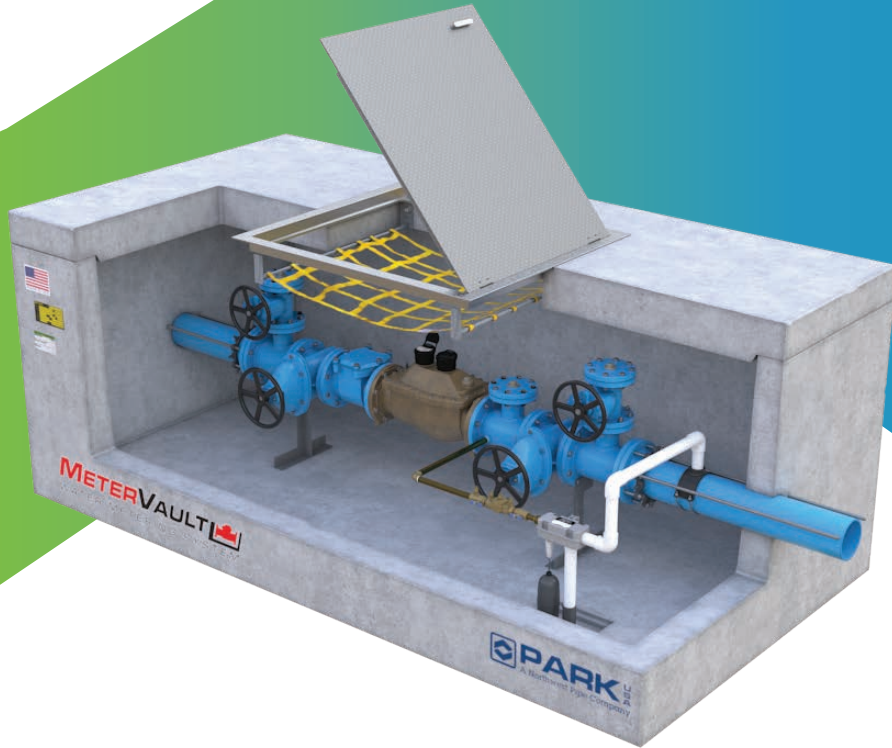
Engineering Data

The meter assembly shall be factory assembled in vault & hydrostatically tested prior to delivery. Field excavation & preparation shall be complete prior to delivery. Pipe, valves and fittings of the assembly shall be approved by one or more of the following associations:



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PROJECT: .			
CUSTOMER: .			
ENGINEER: .			
ORDER #: .	PROJ #: .		
DATE: .	LOCATION: .		
FIRE SERVICE TURBINE METER ASSEMBLY Model FMTCOH - 3" THRU 10"			
PM	PC	DRN	ENG
DATE	07/2018		DWG. NO.
			FMTCOH-1
			REV. A



Features

- Approved by all cities and municipalities
- Variety of piping configurations
- Factory pre-assembled and tested
- In stock and fast delivery
- Quick and easy installation
- Precast concrete vault and access hatchway
- Innovative design, perfect component alignment for inground installations
- OEM top name components

Water Metering Systems

The ParkUSA® MeterVault® is a water meter system designed to measure the volume of water usage for residential, municipal, commercial, and industrial applications.

Clean water is a valuable resource to which Americans have become dependent for all aspects of personal, recreation, and business activities. Water originates from either below ground or surface water sources. Water utilities process and distribute the water via underground water systems. Utility companies charge customers for the water usage. To monitor and meter the water usage, water meters are used to record this information. The water meter is generally located near the property line of the end-user's facility and is installed in a concrete vault for protection and accessibility.

Municipalities around the country require unique water meter arrangements and specifications. Engineers rely on ParkUSA®'s code knowledge and technical expertise to specify the right equipment.

OEM Brands:

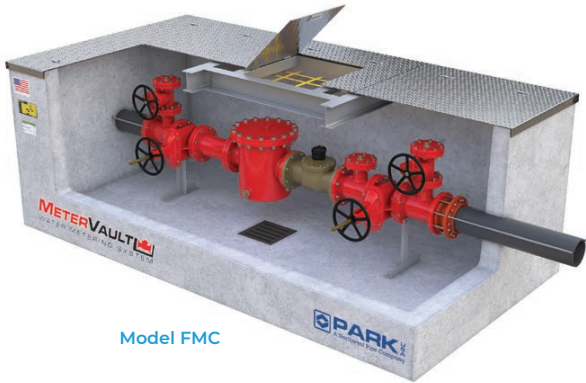


BadgerMeter, Inc.

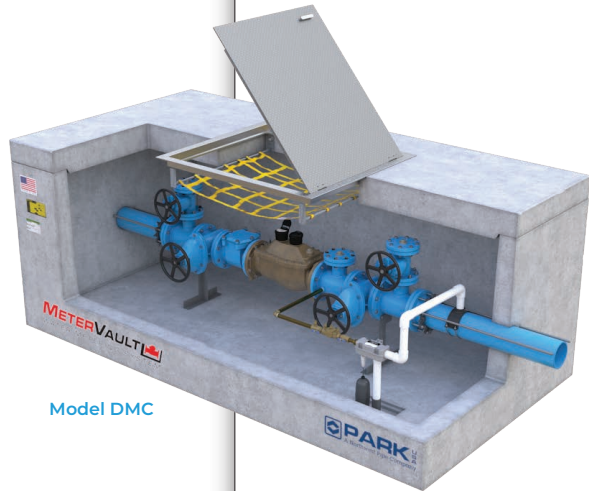


WD | METERVAULT
Standard

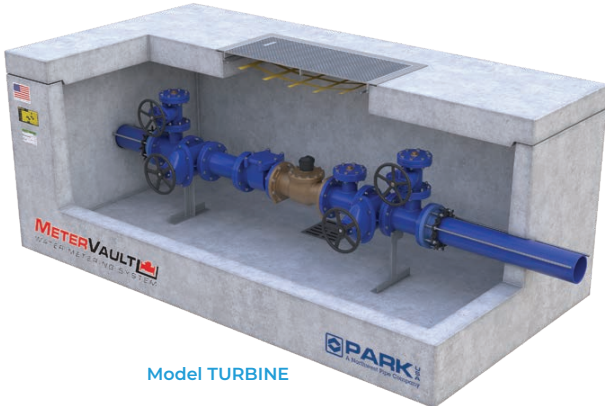




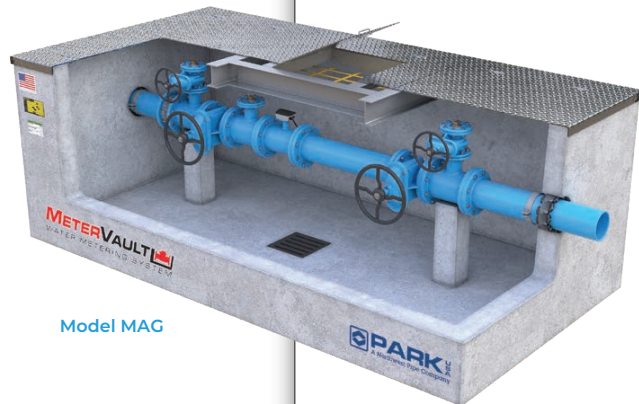
Model FMC



Model DMC



Model TURBINE



Model MAG

How it Works

Although there are multiple types of water meters, the function is the same; to measure the volume of water used. The water meter typically has a strainer upstream to protect against debris and reduce turbulence. On the upstream and downstream side of the water meter are isolation gate valves. Along with a bypass, this arrangement allows the meter to facilitate future calibration and maintenance without service interruption to the end user. Since the water meter assembly is typically placed underground, it is housed within a vault enclosure. The vault is manufactured of precast concrete and contains a hatchway for accessibility to the meter and accessories.

Visit metervault.parkusa.com for more information and design assistance.

To request a quote or catalog, visit request.parkusa.com.

APPLICATIONS



Municipal



Commercial



Manufacturing



Industrial



Residential

BACKFLO



PARK USA
A Northwest Pipe Company

ENGINEERING FACTS

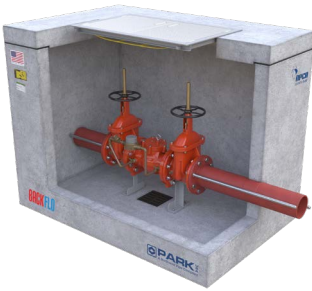
BACKFLOW PREVENTION

Backflow prevention devices are designed to protect the public water supply from cross-connections. A modern community water supply system is designed to ensure that water flows to properties and buildings under pressure. This community water network contains many users where there is a risk to public health if there is a cross-connection between the water supply and a contaminated source. A cross-connection can occur where there is a pressure drop in the water main. This pressure drop causes a vacuum and siphons of entrainment water from end-users into the public water supply.

Public water system pressure can be affected when:

- there is a break in the water main.
- water is being pumped from the main water supply during a fire.
- a customer is using water at a higher pressure than the pressure supplied.
- heavy water use downstream reduces water pressure upstream.
- the water outlet at the property is higher than the water main, causing constant back pressure.

BACKFLO MODELS



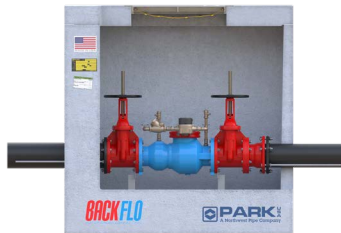
Single detector check



Backflow preventor



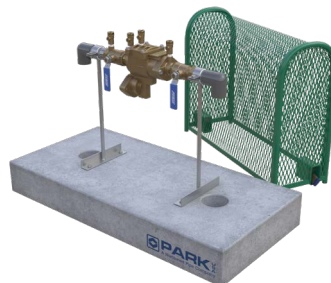
Double detector check preventor



Double Detector Check Backflow



Reduced Pressure Backflow Preventer



RPZ with cage

FEATURES

- Various Models for Different Applications Available
- Completely Pre-assembled for Easy Installation
- Easy Maintenance
- Precast Concrete Containment Vault Construction
- Long-Lasting and Dependable Service
- Only Certified Equipment Used for Construction

Codes and jurisdictions require a backflow preventer device when certain types of hazards exist, including contamination of public water supply from a water user, this issue is known as "cross-connection". Cross-connection hazards are found in potable, fire-protection, irrigation, and industrial water lines.

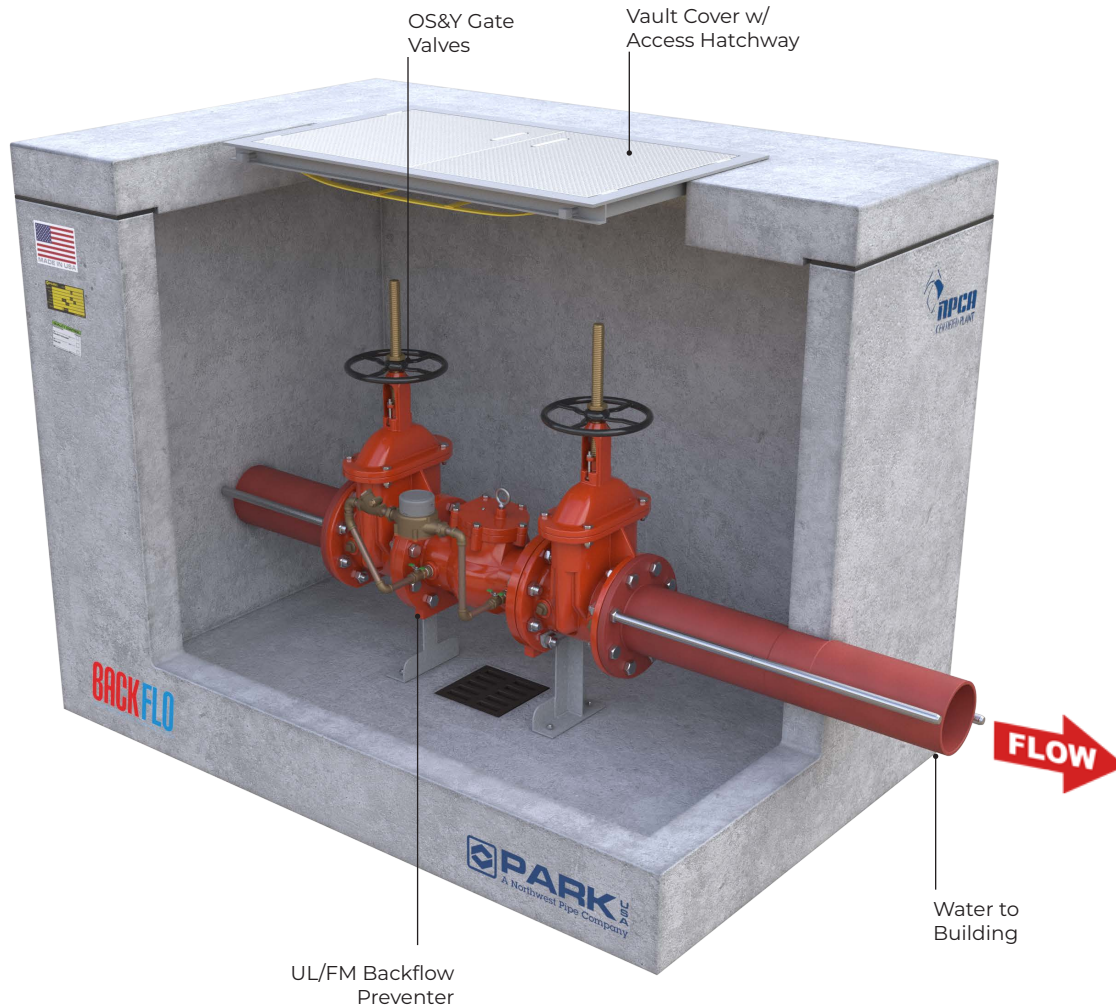
Potential cross-connection hazards are found in potable, fire-protection, irrigation, and industrial water lines. A number of different property types pose a particular risk through cross connections, for example:

- chemical plants
- pest controllers
- golf courses & sports venues
- RV parks
- greywater treatment systems
- metal processing plants
- manufacturing plants
- laundries
- nurseries & commercial garden centers
- properties with rainwater storage

All building codes and jurisdictions require a backflow prevention device where these hazards exist. The design professional should consult building / code authorities for specific requirements.

BACKFLOW PREVENTER MODELS

MODEL	DESCRIPTION	SIZE
DTC	SINGLE DETECTOR CHECK VALVE WITH OS&Y GATE VALVES IN A PRECAST CONCRETE VAULT WITH STEEL COVER & HATCHWAY. APPLICATIONS: FIRE SERVICE, WHERE DETECTION OF LEAKAGE OR UNAUTHORIZED WATER USAGE IS REQUIRED, (NOT UTILIZED AS APPROVED BACKFLOW PREVENTER) AWWA CLASS 1 & 2 UTILIZATION	4" THRU 10"
BP	DOUBLE DETECTOR CHECK BACKFLOW PREVENTER WITH OS&Y GATE VALVES IN A PRECAST CONCRETE VAULT WITH STEEL COVER & HATCHWAY. APPLICATIONS: DOMESTIC & FIRE WATER SERVICE. AWWA CLASS 1, 2, 3, 4 UTILIZATION	3/4" THRU 10"
DDBP	DOUBLE DETECTOR CHECK BACKFLOW PREVENTER WITH DETECTOR METER, & OS&Y GATE VALVES IN A PRECAST CONCRETE VAULT WITH STEEL COVER & HATCHWAY. APPLICATIONS: DOMESTIC & FIRE SERVICE, WHERE DETECTION OF LEAKAGE OR UNAUTHORIZED WATER USAGE IS REQUIRED, AWWA CLASS 1,2, 3, 4 UTILIZATION	3/4" THRU 10"
DDBPPF	DOUBLE DETECTOR CHECK BACKFLOW PREVENTER WITH OS&Y GATE VALVE, POST INDICATOR VALVE, & FIRE DEPARTMENT CONNECTION IN A PRECAST CONCRETE VAULT WITH STEEL COVER & HATCHWAY. APPLICATIONS: FIRE SERVICE, WHERE A FIRE DEPARTMENT CONNECTION AND POSITION INDICATOR VALVE IS REQUIRED. PROVIDES HIGH VISIBILITY AND EASY ACCESS TO LOCAL FIRE AUTHORITIES. ACCESS IN EMERGENCIES SITUATIONS. AWWA CLASS 1, 2, 3, & 4 UTILIZATION	6" THRU 10"
RPZ	REDUCED PRESSURE BACKFLOW PREVENTER WITH OS&Y GATE VALVES ON A PRECAST CONCRETE PAD. APPLICATIONS: DOMESTIC & FIRE WATER SERVICE. AWWA CLASS 4, 5, 6 UTILIZATION	3/4" THRU 10"



SYSTEM COMPONENTS

The ParkUSA BackFlo Prevention System is the perfect solution for ensuring safe water. Designed to prevent water cross-connection, Park backflow prevention systems are economical, easy to specify, and factory-built, offering long-lasting and dependable service.

Vault or Pad System: All backflow assembly vaults and pads are constructed of quality precast concrete, Class I, 5000 PSI @ 28 days. Pre-casting the concrete shell insures that all units achieve structural and physical uniformity. The units are structurally engineered for H-20 truck loading (with H-20 cover specified) and can be buried without need for any other structural protection. The unit is of monolithic construction at bottom and walls to insure against joint leakage. Each vault is equipped with an access hatchway and safety net for fall protection.

Pipe Valves & Fittings: All the equipment used within the backflow assemblies are certified by one of the following associations: American Water Works Associations (AWWA), American Society of Sanitary Engineering (ASSE), CSA, Underwriters Laboratories (UL), Factory Mutual (FM), Uniform Plumbing Code (UPC), and/or the Foundation for the Cross-Connection Control and Hydraulic Research at the University of Southern California.

OPERATION

Depending on Backflow Prevention type, the specific operation process varies, this is described below.

Single Detector Check Assembly

Used in a Class I or II application, Single Check Detector Assemblies are used where minimum hazards exist and where backflow assemblies are not required. The single check valve is used with a by-pass detector meter across it. See ParkUSA Model DTC. (Note that a flow alarm check and/or a single detector check are not considered an approved backflow protection method).

Operation: In a non-flow condition, check valves in the by-pass and mainline units are closed. Flows from 0 to 5 GPM will flow through the bypass.

This operation at low flow rates is accomplished by designing the differential pressure drop across the by-pass line to be slightly less than the mainline check valve. Flows in excess of 5 GPM will open the mainline check valve for normal flow. Double Check Backflow Preventer.

Double Check Backflow Preventer

Used in a Class I, II, III, or IV (low hazard) application, Double Check Assemblies are used to prevent pollutants

that are objectionable but non-toxic. Double Checks may be installed under continuous pressure service and may be subject to back pressure. Double checks can be used in sprinkler irrigation systems, fire protection without chemical additives, protection of industrial plants, and other systems requiring protection. See ParkUSA Model BP.

Operation: In a non-flow condition, the check valves hold a one PSI minimum in the direction of flow. In a flow condition, the check valves are open proportional to the flow demand. In a backflow condition, the check valves will close until the resumption of normal flow.

Double Detector Check Backflow Assembly

Used in a Class I, II, III, or IV application (low hazard) "Detector Check" Backflows are the same as the "Double Checks" previously described except for the addition of a "By-Pass Detector Meter" installed across the check valves. This detector meter is used to detect unauthorized water usage or system leakage. See ParkUSA Model DDBP.

Operation: In a non-flow condition, check valves in the by-pass and mainline units are closed. Flows from 0 to 5 GPM will flow through the bypass. This operation at low flow rates is accomplished by designing the differential pressure drop across the by-pass line to be slightly less than the mainline check valves. Flows in excess of 5 GPM will open the mainline check valves for normal flow.

Reduced Pressure Backflow Preventer

Used in a Class IV, V or VI (high hazard) applications, Reduced Pressure Assemblies are used to protect against toxic fluids in water services to industrial plants, hospitals, morgues, mortuaries, and chemical plants, and other applications requiring maximum protection. See ParkUSA Model RPBP.

Operation: In a flow condition, the check valves are open with the pressure between the checks, called the zone, being maintained at least five PSI lower than the inlet pressure, with the relief valve maintained closed. Should abnormal conditions arise under no flow or reversal of flow, the differential relief valve will open and discharge to maintain the zone at least three PSI lower than the supply. In resumption of normal flow, the zone's differential pressure will resume and the relief valve will close.

DESIGN CONSIDERATIONS

Codes and jurisdictions require a backflow preventer device when certain types of hazards exist, including contamination of public water supply from a water user, this issue is known as "cross-connection". Cross-connection hazards are found in potable, fire-protection, irrigation, and industrial water lines. The design professional should consult local building codes and consider potential cross-connection hazards within.

MAINTENANCE

Backflow preventers must be inspected annually with the results recorded on an official Water Backflow Preventer Inspection Report to be submitted to the local AHJ. If any essential part of the unit fails inspection, it must be repaired or replaced then pass a subsequent inspection.

SIZING

For the complete design of a backflow prevention system, there are three basic topics that must be addressed. The degree of hazard, the type of application, and the type of installation.

The degree of hazard is the primary factor when determining the proper model.

Low hazard application: potential backflow can pollute the drinking water.

- Pollution is defined as materials that can cause undesirable effects to the water, such as discoloration, smell or taste, but will not cause sickness or death.

High hazard application: potential backflow can contaminate the water supply.

- Contamination is defined as any impairment to the water quality such that contact with this water can result in illness or death.

A lethal hazard involves radioactive material or raw sewage. An air gap is the only effective means of protecting against lethal hazards. Under no circumstance would a mechanical backflow preventer be used to protect against a lethal hazard.

The type of application and industry, such as fire protection, irrigation, waterworks, and plumbing, each have particular requirements. Fire sprinkler systems may require detector assemblies, and irrigation systems may require products that are not used universally in plumbing systems. Each application is also unique in regards to flow requirements. Plumbing and waterworks require consistent flow of water. Irrigation requires flow perhaps two percent of the time and the remaining 98 percent of the time is in a static condition. Fire protection must stand ready for action with 100 percent static water pressure. Each application can present a unique situation, which will affect a backflow preventer differently.

Installation types include outdoor, indoor, below grade (pit installations), horizontal, and vertical installations.

Facilities that require uninterrupted supply of water, such as hospitals, resort hotels, or industrial applications, will require multiple connections or manifold assemblies.

- Outdoor installations face the potential vandalism, theft, soil erosion, and freezing temperatures. Protective enclosures can help to mitigate some of these issues.
- Indoor installations might need to address the issue of water discharge. Of the five standard types of backflow preventers, three spill water, two at start-up and one as a normal function.

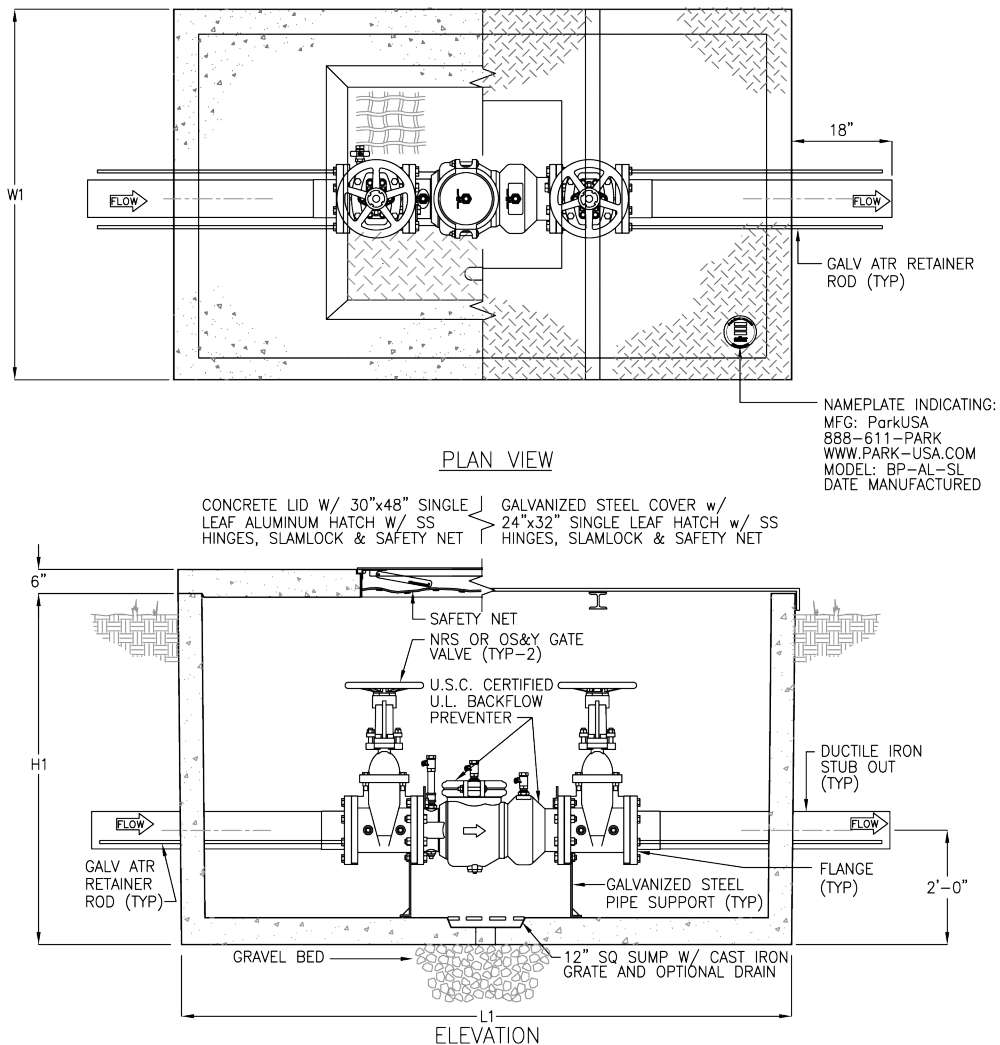
- Below grade installations can be convenient, but are limited to certain types of backflow preventers. Care must be taken to provide accessibility for testing and maintenance.
- Horizontal installations are the most common.
- Vertical installations are limited to certain types of backflow preventers. Reduced Pressure Principle Backflow Preventers may not be suitable for vertical

installations. Understanding the direction of flow (flow-up or flow-down) is important from an approval standpoint.

ParkUSA Backflow preventer sizes vary by model and configurations. The standard sizes available for each model can be found in the following table.

BACKFLOW PREVENTOR SIZES

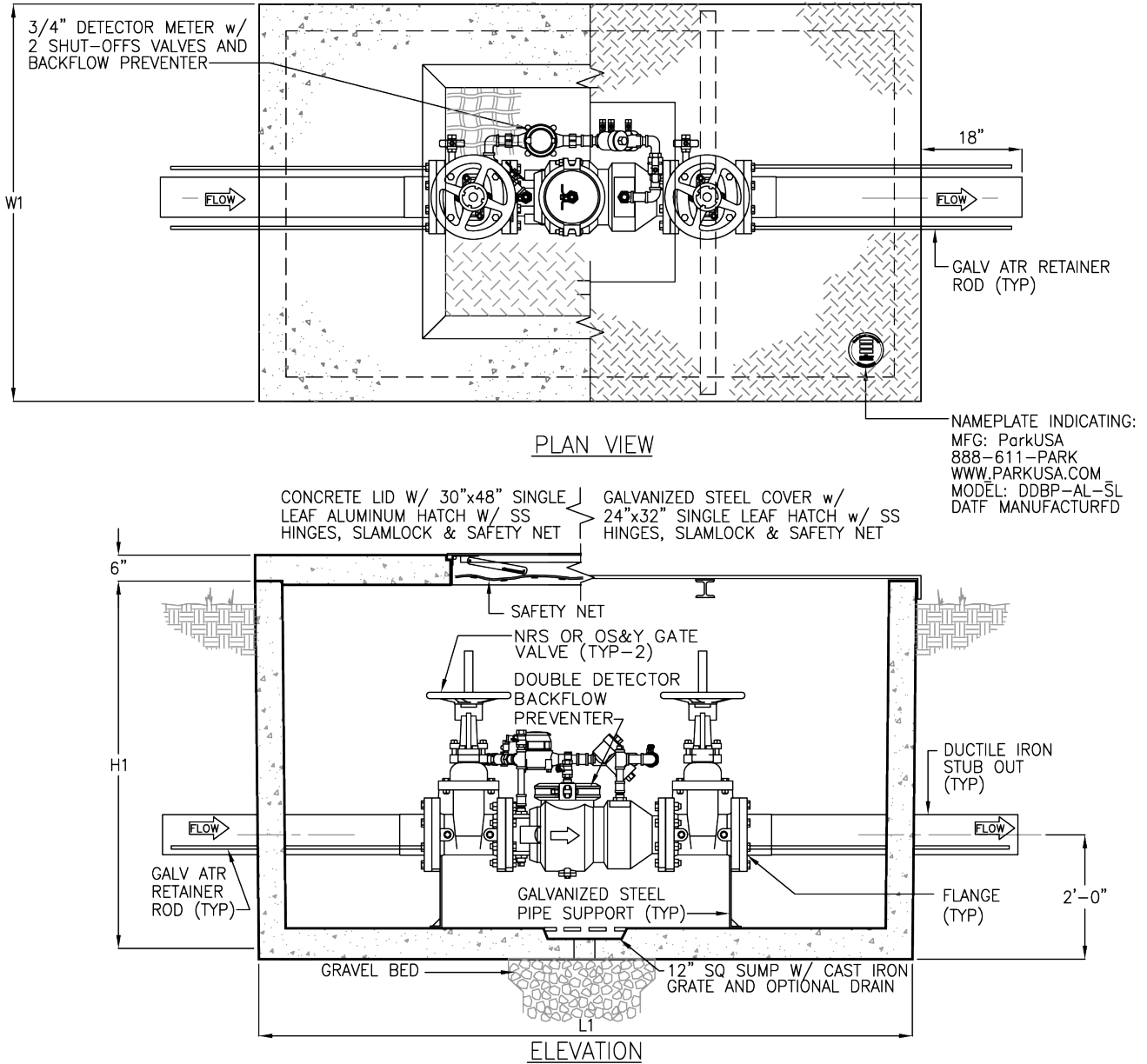
MODEL	SIZE	L1	W1	H1	WEIGHT
BP3	3"	6'-0"	3'-6"	4'-0"	2,700 LBS
BP4	4"	6'-0"	3'-6"	4'-0"	2,900 LBS
BP6	6"	7'-10"	4'-4"	5'-6"	9,000 LBS
BP8	8"	7'-10"	4'-4"	5'-6"	15,000 LBS
BP10	10"	9'-0"	6'-0"	6'-6"	18,000 LBS
BP12	12"	9'-0"	6'-0"	6'-6"	18,000 LBS



DOUBLE DETECTOR BACKFLOW PREVENTER SIZES

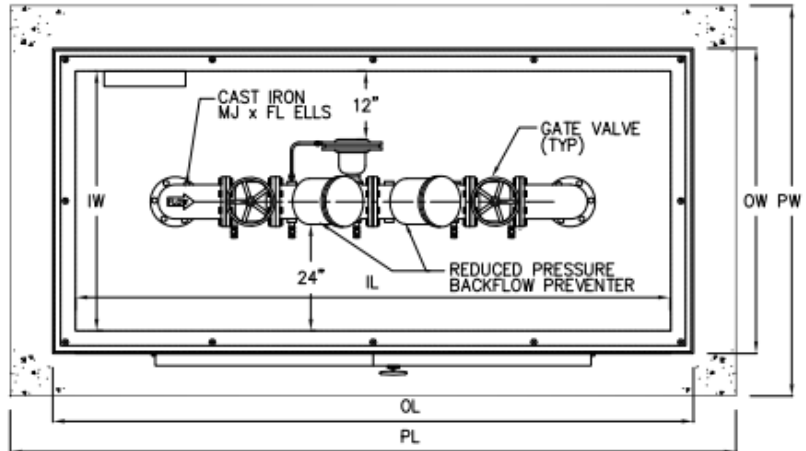
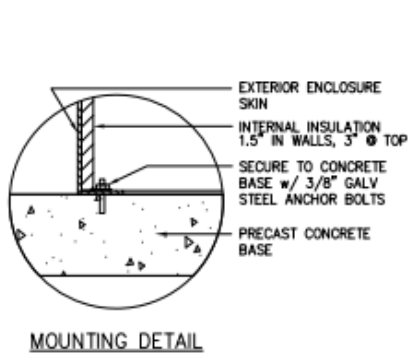
MODEL	SIZE	L1	W1	H1	WEIGHT
DDBP-03	3"	6'-0"	3'-6"	4'-0"	3,500 LBS
DDBP-04	4"	6'-0"	3'-6"	4'-0"	3,500 LBS
DDBP-06	6"	7'-10"	4'-4"	5'-6"	9,000 LBS
DDBP-08	8"	8'-8"	5'-0"	5'-6"	15,000 LBS
DDBP-10	10"	9'-0"	6'-0"	7'-0"	18,000 LBS
DDBP-12	12"	9'-0"	6'-0"	7'-0"	18,000 LBS

Domestic &
Fire Water



REDUCED PRESSURE BACKFLOW PREVENTER SIZES

MODEL	BFP SIZE	INSIDE DIMENSIONS L X W X H X CL	OUTSIDE DIMENSIONS L X W X H	DOOR SIZE H X W	PAD DIMENSIONS L X WLPT
RBPBAE-04	4"	85"X51"X43"X63"	89"X55"X47"	36"X70"	102"X68"X6"
RBPBAE-06	6"	105"X53"X52"X78"	109"X57"X56"	36"X70"	122"X70"X6"
RBPBAE-08	8"	115"X56"X62"X89"	119"X60"X60"	36"X70"	132"X73"X6"
RBPBAE-10	10"	135"X60"X70"X106"	139"X64"X64"	36"X70"	152"X77"X6"

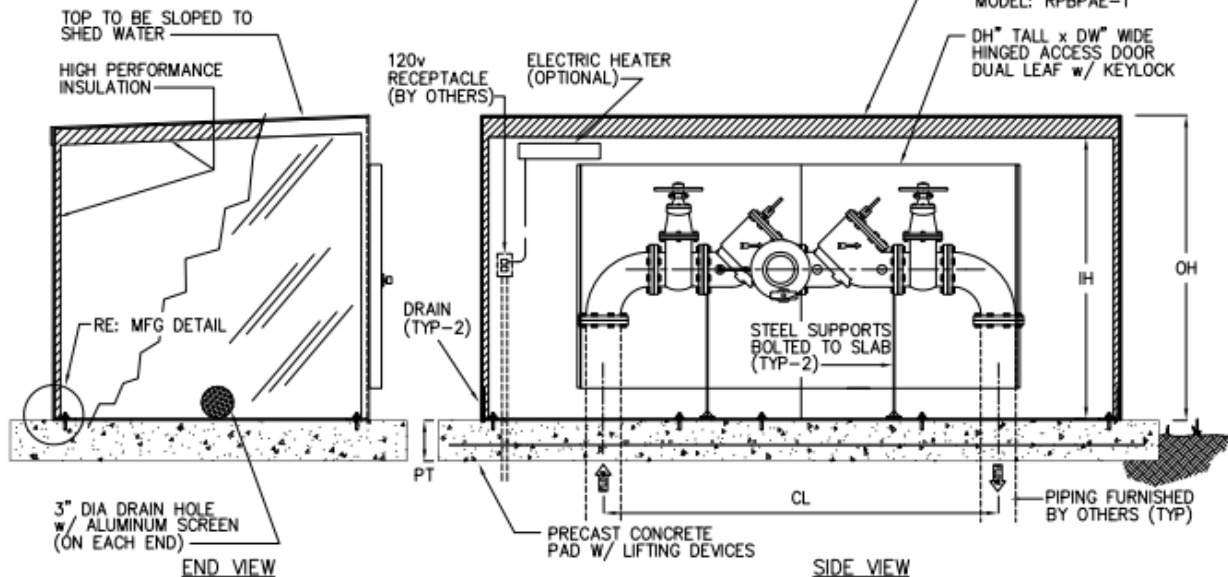


MODEL NO.	BFP SIZE	INSIDE DIMENSIONS				OUTSIDE DIMENSIONS			DOOR SIZE		PAD DIMENSIONS		
		IL	IW	IH	CL	OL	OW	OH	DH	DW	PL	PW	PT
RBPBAE-04	4"	85"	51"	43"	63"	89"	55"	47"	36"	70"	102"	68"	6"
RBPBAE-06	6"	105"	53"	52"	78"	109"	57"	56"	36"	70"	122"	70"	6"
RBPBAE-08	8"	115"	56"	62"	89"	119"	60"	60"	36"	70"	132"	73"	6"
RBPBAE-10	10"	135"	60"	70"	106"	139"	64"	64"	36"	70"	152"	77"	6"

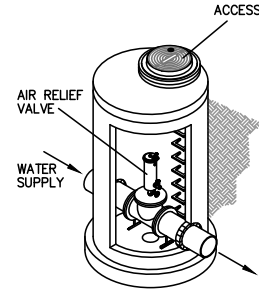
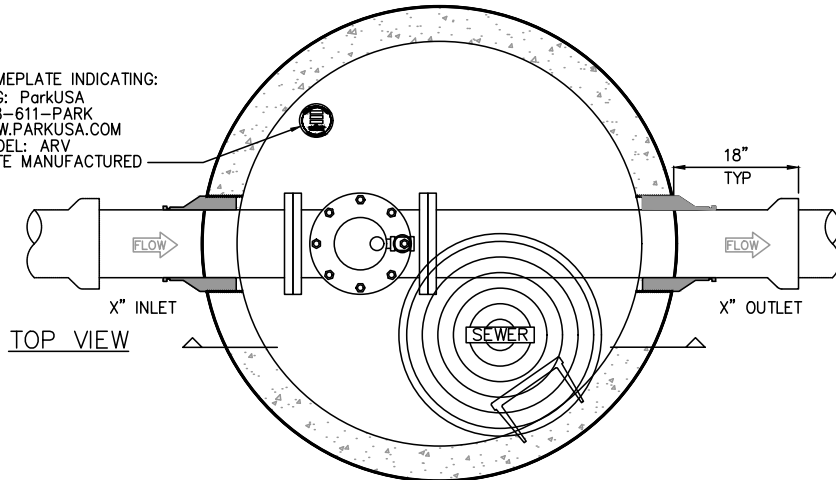
TOP VIEW

NOTE: SIZE MAY VARY DEPENDING ON MODEL OF BACKFLOW PREVENTER

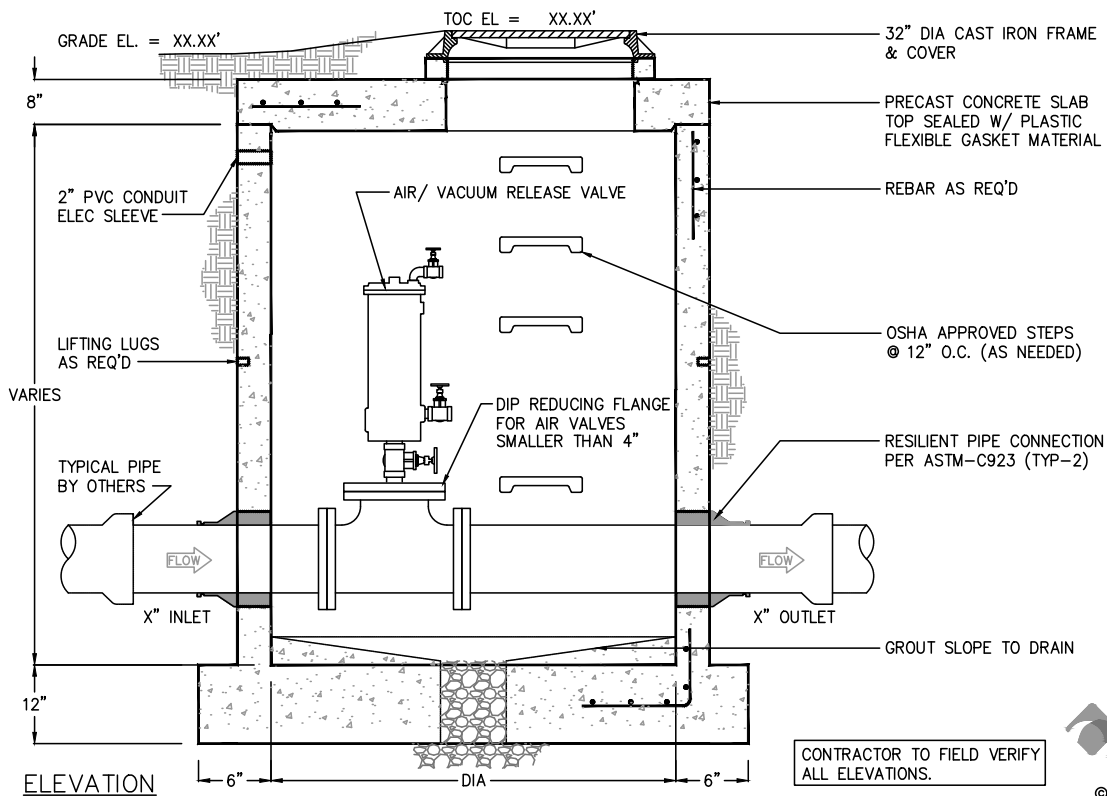
OPTIONAL: PRE-ENGINEERED ALUMINUM ENCLOSURE
MFG: ParkUSA
WWW.PARK-USA.COM
888-611-PARK
MODEL: RBPBAE-1



NAMEPLATE INDICATING:
MFG: ParkUSA
888-611-PARK
WWW.PARKUSA.COM
MODEL: ARV
DATE MANUFACTURED



MODEL	MAX FORCE MAIN DIA	DIA
ARV-5	8"	5'-0"
ARV-6	16"	6'-0"
ARV-8	36"	8'-0"



CONTRACTOR TO FIELD VERIFY ALL ELEVATIONS.



Specifications

CONCRETE: Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor, first stage of wall and baffle with sectional riser to required depth.

REINFORCEMENT: Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal. Structural design is based on AASHTO HS-20 loading.

ACCESS COVER: Manhole frames, covers or grates are manufactured of grey cast iron conforming to ASTM A48-76 Class 35. Manhole shall have 24 inch inside diameter and be traffic duty.

Engineering Data

Manhole Station is structurally and hydraulically engineered conforming to Uniform Plumbing Code and ASTM C-478.

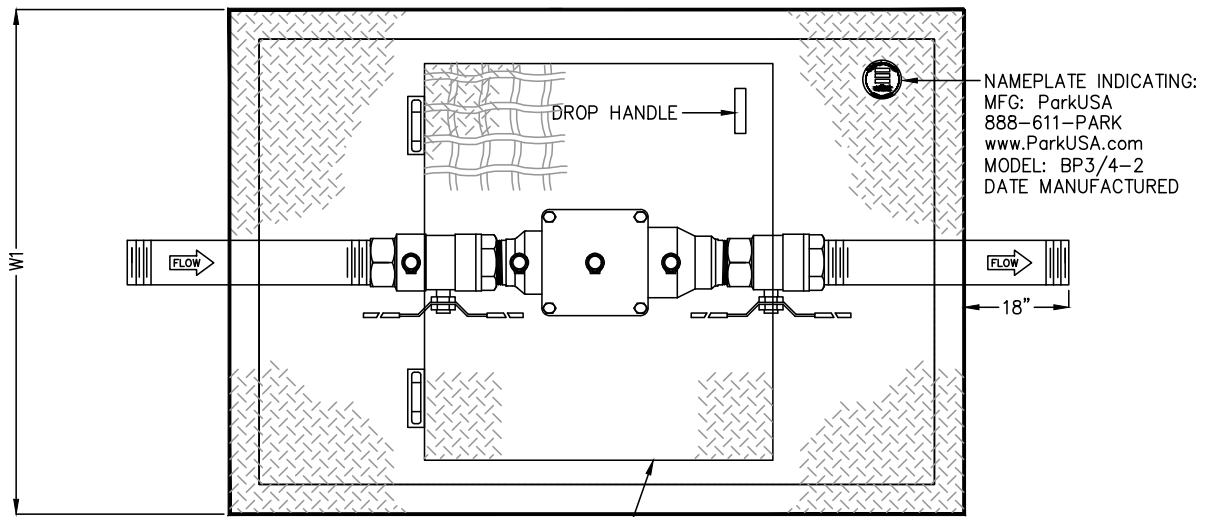
Field excavation and preparation shall be completed prior to delivery of the septic tank. Use dimensional data as shown.

PROJECT:
CUSTOMER:
ENGINEER:
ORDER #:
PROJ #:
DATE:



AIR RELIEF VALVE ASSEMBLY
MODEL ARV

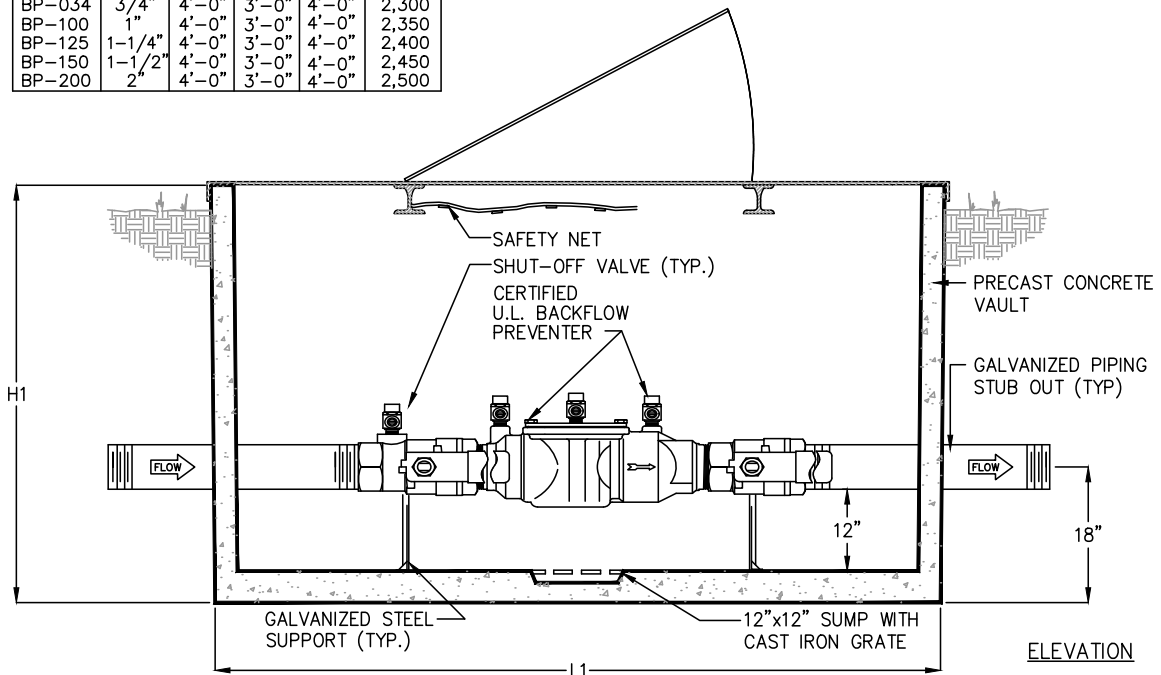
PM	DRN	ENG	DWG. NO.	REV.
DATE	2018		ARV-2	A



PLAN VIEW

MODEL	SIZE	L1	W1	H1	WEIGHT
BP-034	3/4"	4'-0"	3'-0"	4'-0"	2,300
BP-100	1"	4'-0"	3'-0"	4'-0"	2,350
BP-125	1-1/4"	4'-0"	3'-0"	4'-0"	2,400
BP-150	1-1/2"	4'-0"	3'-0"	4'-0"	2,450
BP-200	2"	4'-0"	3'-0"	4'-0"	2,500

ALUMINUM DIAMOND PLATE
COVER w/ HINGED ACCESS
COVER PEDESTRIAN RATED



ELEVATION

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Specifications

- CONCRETE:** Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
- REINFORCEMENT:** Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.
- ACCESS COVER:** 1/4" skid-resistant aluminum floor plate welded to 3" angle frame with (2) 3"x2-3/8" I-beam supports. Hatch to be furnished with 316 stainless steel bolts and hinges

Engineering Data

The backflow assembly shall be factory assembled in vault & hydrostatically tested prior to delivery. Field excavation & preparation shall be complete prior to delivery. Pipe, valves and fittings of the assembly shall be approved by one or more of the following associations:

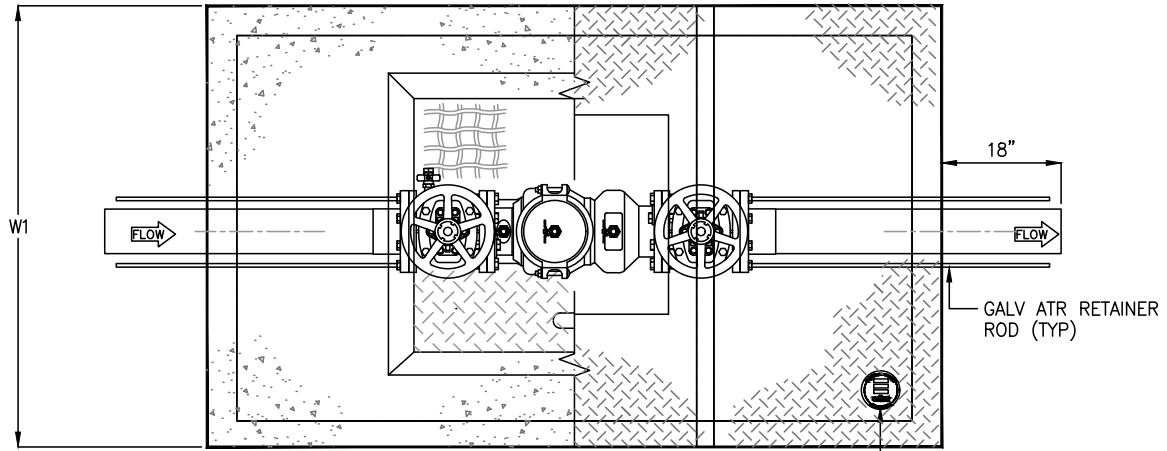


PROJECT: _____
 CUSTOMER: _____
 ENGINEER: _____
 ORDER #: _____
 PROJ #: _____
 DATE: _____



DOUBLE CHECK BACKFLOW PREVENTER ASSEMBLY
MODEL BP - 3/4" THRU 2"

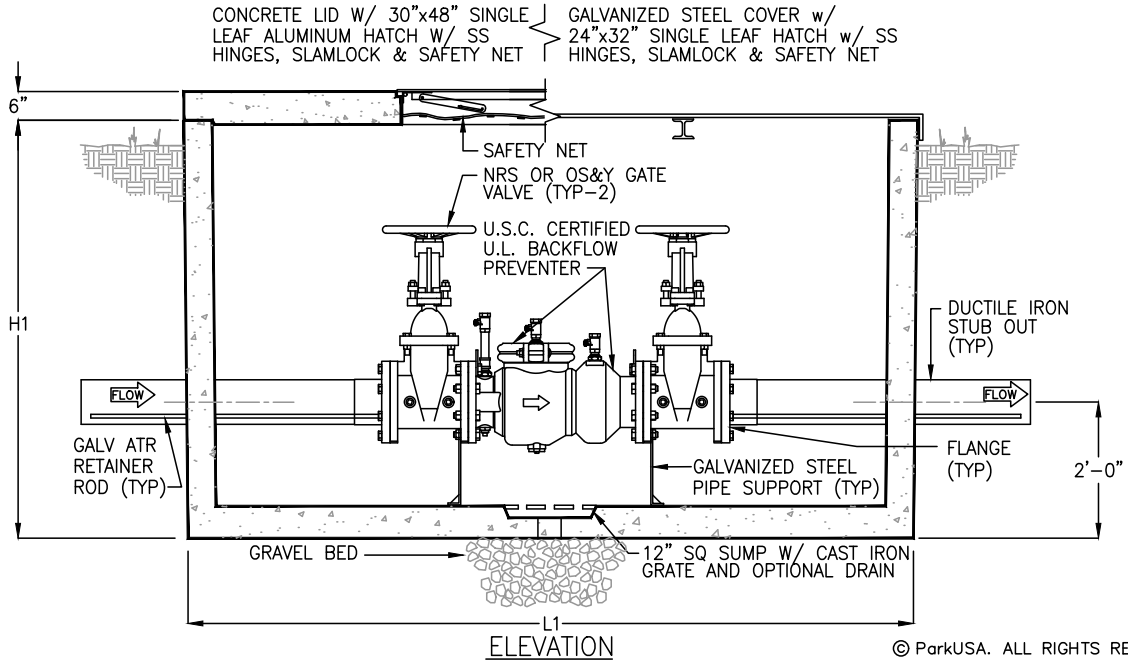
PM	DRN	CHK	DWG. NO.	REV.
DATE	2018		BP3/4-2	B



MODEL	SIZE	L1	W1	H1	WEIGHT LBS
BP-03	3"	6'-0"	3'-6"	4'-0"	2,700
BP-04	4"	6'-0"	3'-6"	4'-0"	2,900
BP-06	6"	7'-10"	4'-4"	5'-6"	9,000
BP-08	8"	8'-8"	5'-0"	5'-6"	15,000
BP-10	10"	9'-0"	6'-0"	6'-6"	18,000
BP-12	12"	9'-0"	6'-0"	6'-6"	18,000

PLAN VIEW

NAMEPLATE INDICATING:
MFG: ParkUSA
888-611-PARK
WWW.PARK-USA.COM
MODEL: BP-AL-SL
DATE MANUFACTURED



ELEVATION

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Specifications

- CONCRETE:** Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
- REINFORCEMENT:** Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.
- ACCESS COVER:** 1/4" steel skid-resistant floor plate welded to 3" angle frame with (2) 3"x2-3/8" I-beam supports. Hatch to be furnished with 316 stainless steel bolts and hinges
- HATCHWAY:** 1/4" Aluminum diamond plate cover with extruded aluminum frame. Hatch to be furnished with 316 stainless steel slam lock & hinges.

Engineering Data

The backflow assembly shall be factory assembled in vault & hydrostatically tested prior to delivery. Field excavation & preparation shall be complete prior to delivery. Pipe, valves and fittings of the assembly shall be approved by one or more of the following associations:



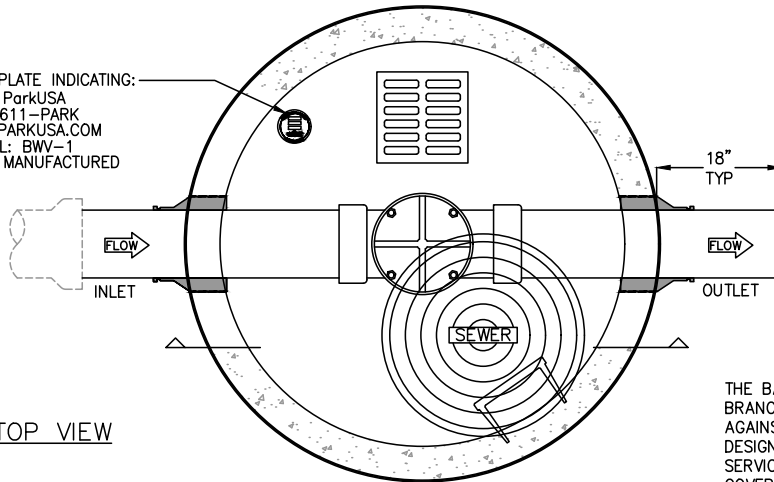
PROJECT:
CUSTOMER:
ENGINEER:
ORDER #:
PROJ #:
DATE:



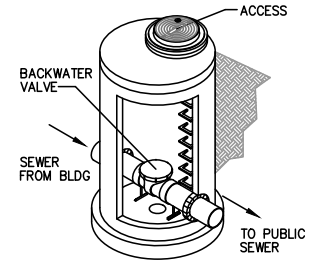
DOUBLE CHECK BACKFLOW PREVENTER ASSEMBLY
MODEL BP - 3" THRU 10"

PM	DRN	ENG	DWG. NO.	REV.
DATE	2018		BP-AL-SL	A

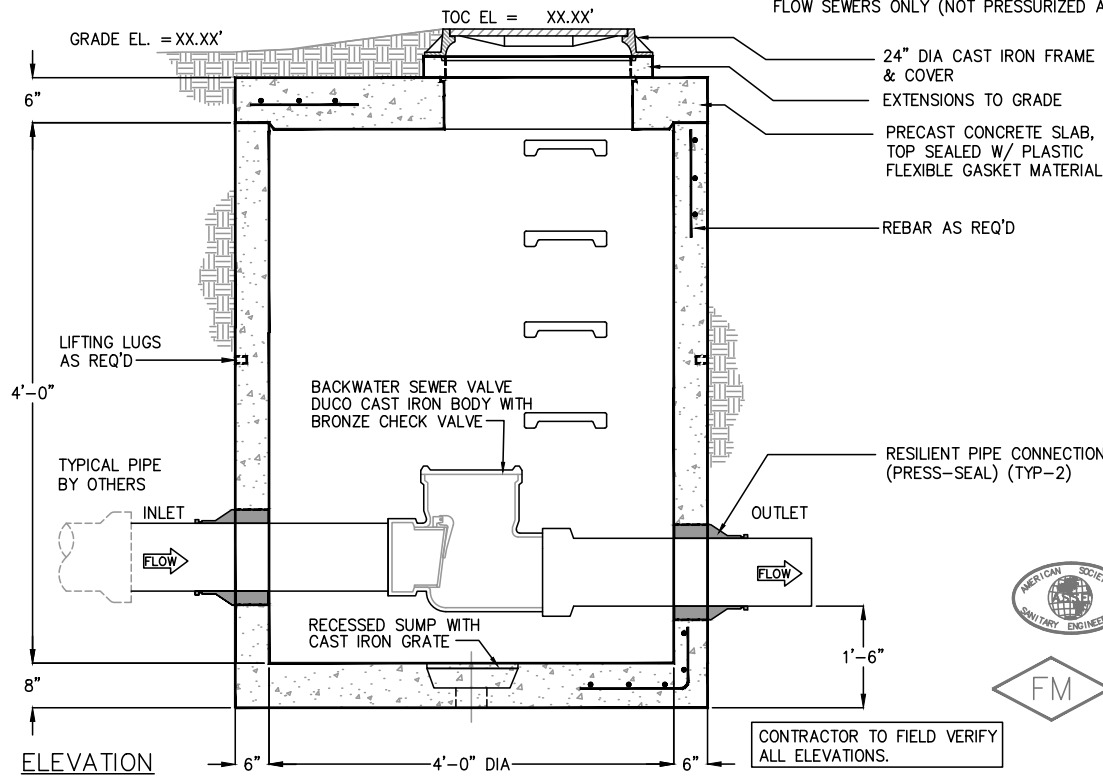
NAMEPLATE INDICATING:
MFG: ParkUSA
888-611-PARK
WWW.PARKUSA.COM
MODEL: BWV-1
DATE MANUFACTURED



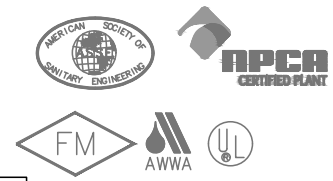
TOP VIEW



THE BACKWATER SEWER VALVE ASSEMBLY IS USED IN MAIN OR BRANCH SEWER LINES TO PROTECT BASEMENTS AND LOW AREAS AGAINST BACKFLOW FROM PUBLIC SEWERS. THE VALVE ASSEMBLY DESIGN PERMITS ACCESS TO BACKWATER VALVE ASSEMBLY, FOR SERVICING OR CLEANING, THROUGH A FULL OPENING REMOVABLE COVER. THE BACKWATER VALVE IS RECOMMENDED FOR GRAVITY FLOW SEWERS ONLY (NOT PRESSURIZED APPLICATIONS).



MODEL	BWV SIZE
BWV-2	2"
BWV-3	3"
BWV-4	4"
BWV-6	6"
BWV-8	8"



CONTRACTOR TO FIELD VERIFY ALL ELEVATIONS.

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Specifications

CONCRETE: Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor, first stage of wall and baffle with sectional riser to required depth. gross empty weight of approximately 13,300 lbs.

REINFORCEMENT: Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal. Structural design is based on AASHTO HS-20 loading.

ACCESS COVER: Manhole frames, covers or grates are manufactured of grey cast iron conforming to ASTM A48-76 Class 35. Manhole shall have 24 inch inside diameter and be traffic duty.

Engineering Data

Manhole Station is structurally and hydraulically engineered conforming to Uniform Plumbing Code and ASTM C-478.

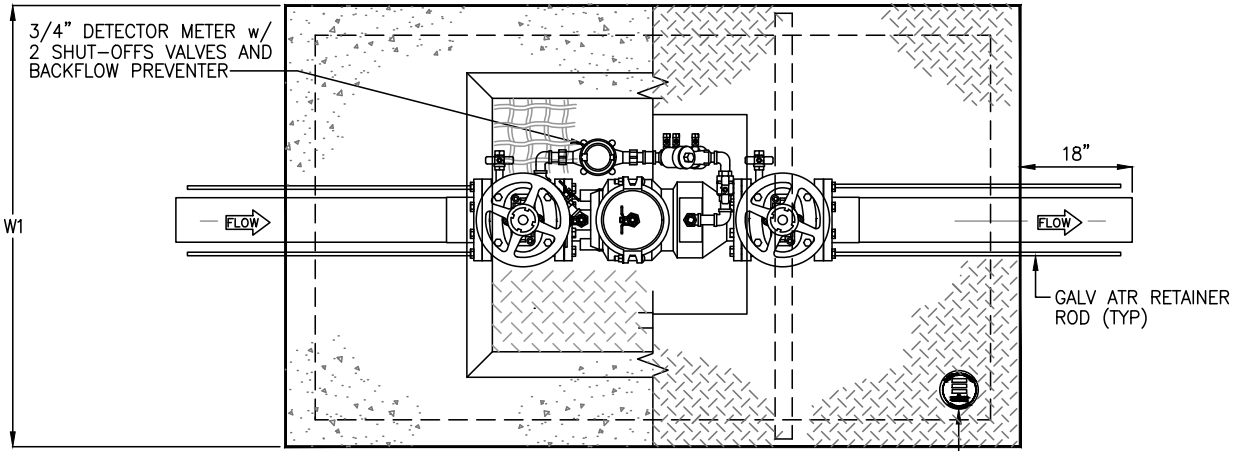
Field excavation and preparation shall be completed prior to delivery of the septic tank. Use dimensional data as shown.

PROJECT:
CUSTOMER:
ENGINEER:
ORDER #:
PROJ #:
DATE:



BACKWATER SEWER VALVE ASSEMBLY
MODEL BWV - 2" THRU 8"

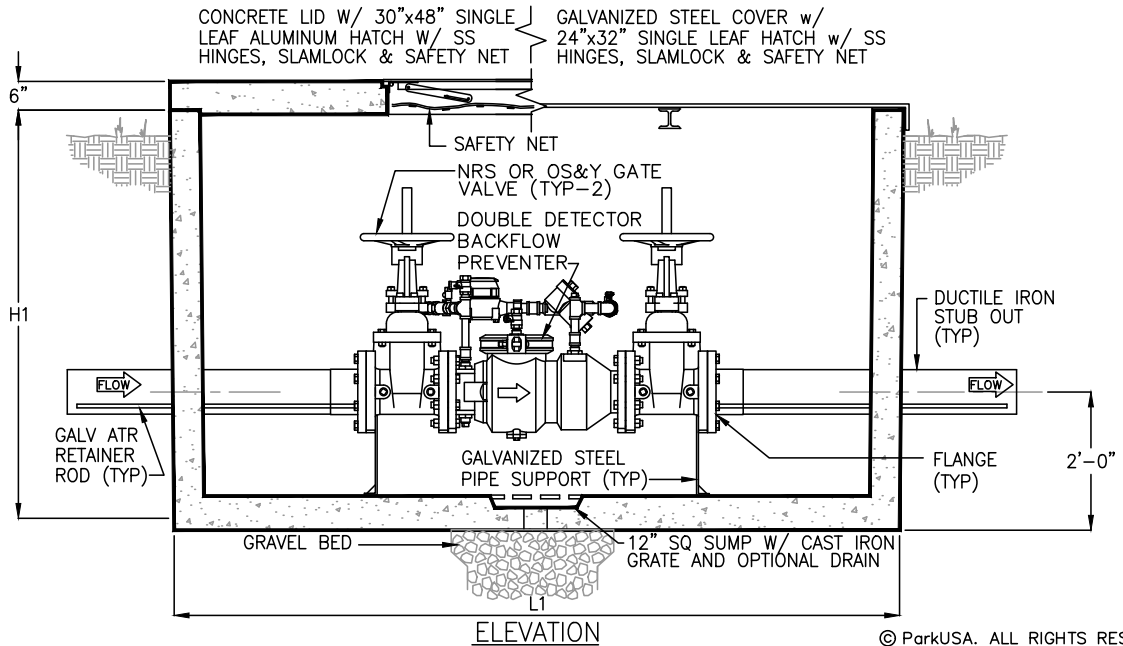
PM	DRN	ENG	DWG. NO.	REV.
			BWV-1	A
DATE	2018			



MODEL	SIZE	L1	W1	H1	WEIGHT LBS
DDBP-03	3"	6'-0"	3'-6"	4'-0"	3,500
DDBP-04	4"	6'-0"	3'-6"	4'-0"	3,500
DDBP-06	6"	7'-10"	4'-4"	5'-6"	9,000
DDBP-08	8"	8'-8"	5'-0"	5'-6"	15,000
DDBP-10	10"	9'-0"	6'-0"	7'-0"	18,000
DDBP-12	12"	9'-0"	6'-0"	7'-0"	18,000

PLAN VIEW

NAMEPLATE INDICATING:
MFG: ParkUSA
888-611-PARK
WWW.PARKUSA.COM
MODEL: DDBP-AL-SL
DATE MANUFACTURED



ELEVATION

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Specifications

- CONCRETE:** Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
- REINFORCEMENT:** Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.
- ACCESS COVER:** 1/4" steel skid-resistant floor plate welded to 3" angle frame with (2) 3"x2-3/8" I-beam supports. Hatch to be furnished with 316 stainless steel bolts and hinges
- HATCHWAY:** 1/4" Aluminum diamond plate cover with extruded aluminum frame. Hatch to be furnished with 316 stainless steel slam lock & hinges.

Engineering Data

The backflow assembly shall be factory assembled in vault & hydrostatically tested prior to delivery. Field excavation & preparation shall be complete prior to delivery. Pipe, valves and fittings of the assembly shall be approved by one or more of the following associations:

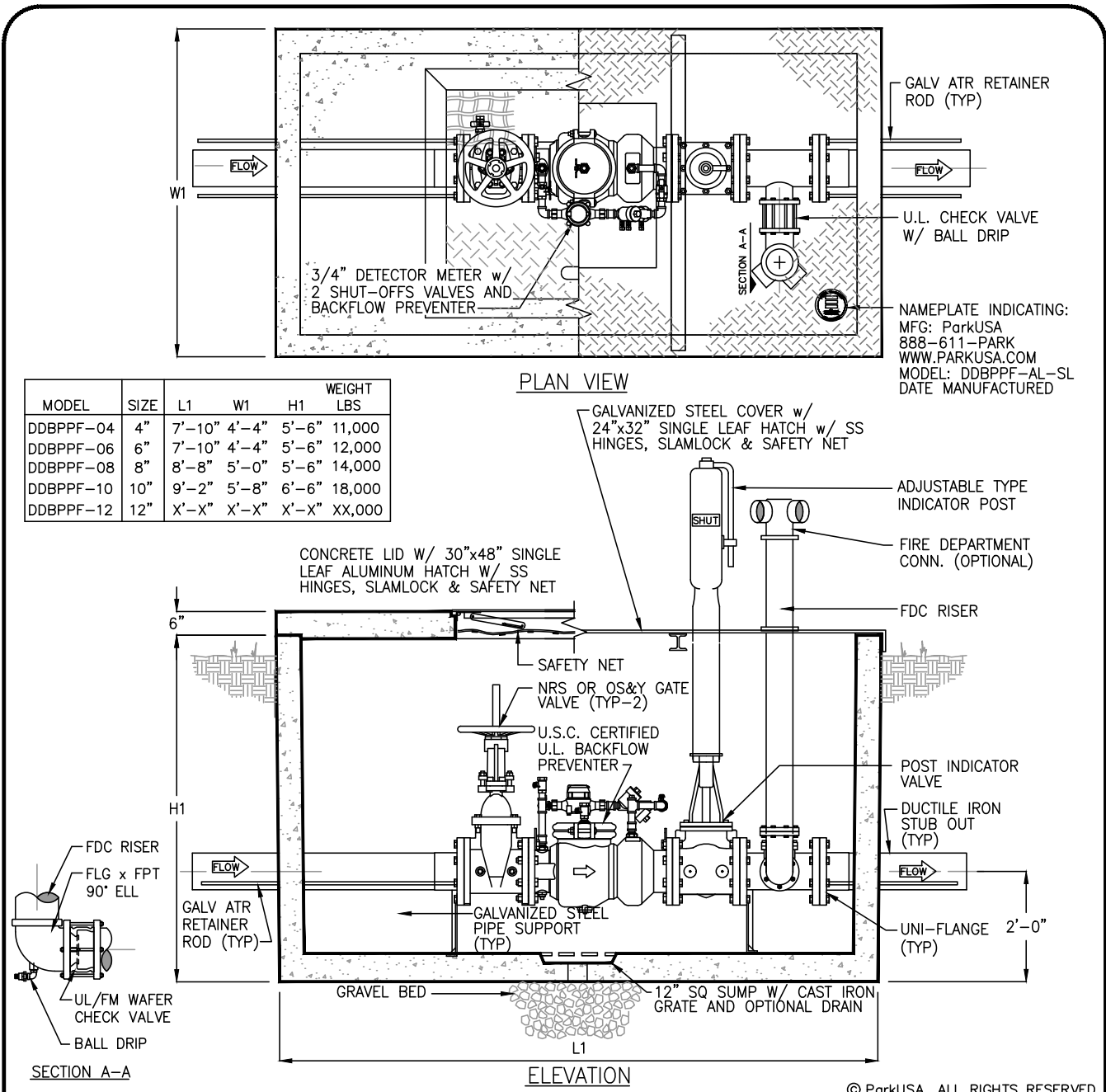


PROJECT:
CUSTOMER:
ENGINEER:
ORDER #:
PROJ #:
DATE:



DOUBLE DETECTOR BACKFLOW PREVENTER
ASSEMBLY FOR FIRE SERVICE,
MODEL DDBP - 3" THRU 10"

PM	DRN	ENG	DWG. NO.	REV.
DATE	2018		DDBP-AL-SL	A



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Specifications

- CONCRETE:** Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
- REINFORCEMENT:** Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.
- ACCESS COVER:** 1/4" steel skid-resistant floor plate welded to 3" angle frame with (2) 3"x2-3/8" I-beam supports. Hatch to be furnished with 316 stainless steel bolts and hinges
- HATCHWAY:** 1/4" Aluminum diamond plate cover with extruded aluminum frame. Hatch to be furnished with 316 stainless steel slam lock & hinges.

Engineering Data

The backflow assembly shall be factory assembled in vault & hydrostatically tested prior to delivery. Field excavation & preparation shall be complete prior to delivery. Pipe, valves and fittings of the assembly shall be approved by one or more of the following associations:

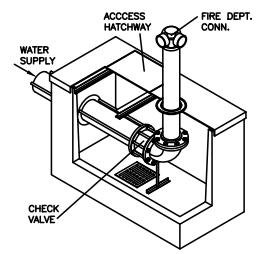
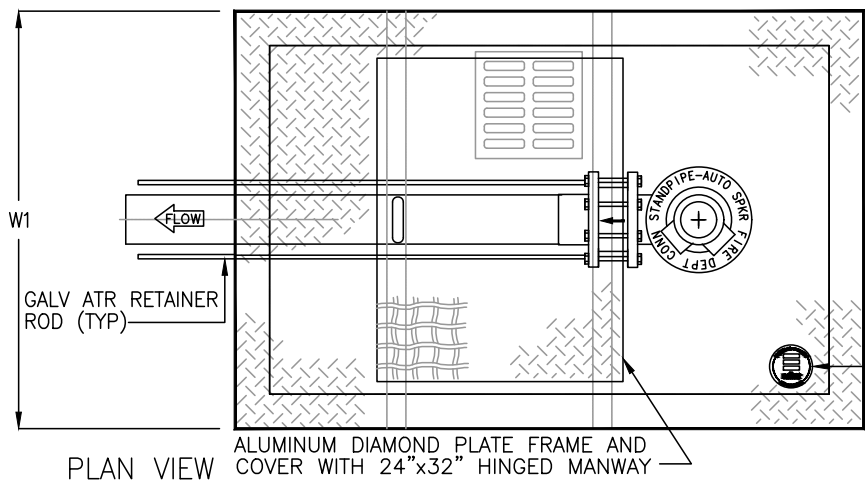


PROJECT: _____
 CUSTOMER: _____
 ENGINEER: _____
 ARCHITECT: _____
 ORDER #: _____
 DATE: _____ PM: _____



DETECTOR CHECK BACKFLOW PREVENTER ASSEMBLY w/ PIV & FDC MODEL DDBPPF - 4" THRU 10"

PM	DRN	ENG	DWG. NO.	REV.
DATE	2018		DDBPPF-AL-SL	A



MODEL	SIZE	L1	W1	H1	WEIGHT LBS
FDC-4	4"	6'-0"	3'-0"	4'-0"	5,000
FDC-6	6"	6'-0"	3'-0"	4'-0"	5,100
FDC-8	8"	6'-0"	3'-0"	4'-0"	5,200

PLAN VIEW

ALUMINUM DIAMOND PLATE FRAME AND COVER WITH 24"x32" HINGED MANWAY

NAMEPLATE INDICATING:
MFG: ParkUSA
888-611-PARK
WWW.PARKUSA.COM
MODEL: FDC-1
DATE MANUFACTURED

FIRE DEPARTMENT CONN. (ROUGH BRASS)

4" OR 6" GALV FDC RISER

FIRE DEPARTMENT IDENTIFICATION PLATE

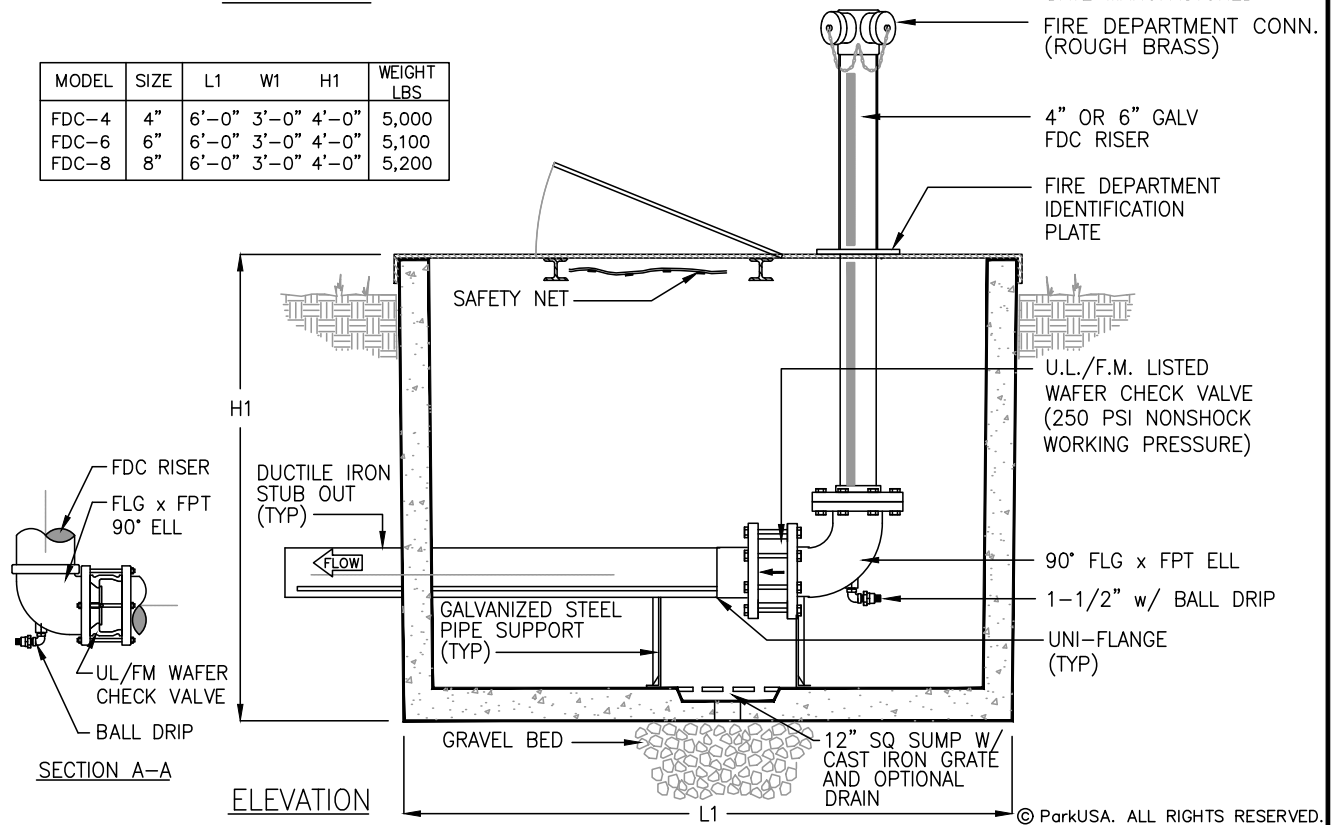
U.L./F.M. LISTED WAFER CHECK VALVE (250 PSI NONSHOCK WORKING PRESSURE)

90° FLG x FPT ELL

1-1/2" w/ BALL DRIP

UNI-FLANGE (TYP)

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ELEVATION

Specifications

- CONCRETE:** Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
- REINFORCEMENT:** Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.
- ACCESS COVER:** 1/4" skid-resistant aluminum floor plate welded to 3" angle frame with (2) 3"x2-3/8" I-beam supports. Hatch to be furnished with 316 stainless steel bolts and hinges

Engineering Data

The valve assembly shall be factory assembled in vault & hydrostatically tested prior to delivery. Field excavation & preparation shall be complete prior to delivery. Pipe, valves and fittings of the assembly shall be approved by one or more of the following associations:

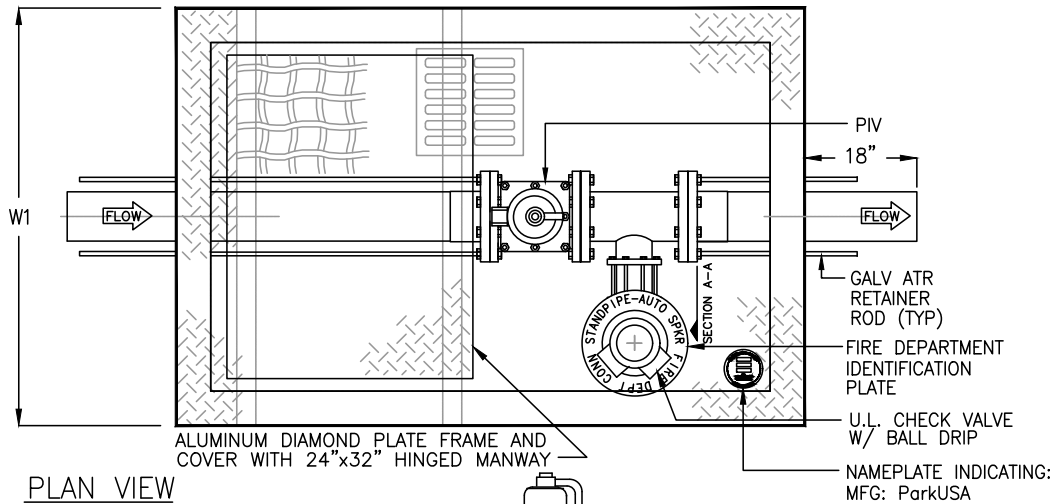


PROJECT: _____
 CUSTOMER: _____
 ENGINEER: _____
 ORDER #: _____
 PROJ #: _____
 DATE: _____



FIRE DEPARTMENT CONNECTION ASSEMBLY W/ FDC RISER, MODEL FDC - 4" THRU 8"

PM	DRN	ENG	DWG. NO.	REV.
			FDC-1	A
DATE			2018	

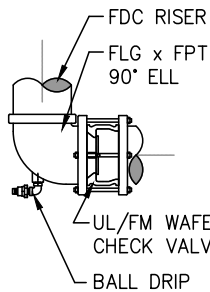


PLAN VIEW

MODEL	SIZE	L1	W1	H1	WEIGHT LBS
FDCPIV-4	4"	6'-0"	3'-0"	4'-0"	5,000
FDCPIV-6	6"	6'-0"	3'-0"	4'-0"	5,100
FDCPIV-8	8"	6'-0"	3'-0"	4'-0"	5,200
FDCPIV-10	10"	7'-10"	4'-4"	5'-6"	6,200
FDCPIV-12	12"	7'-10"	4'-4"	5'-6"	6,200

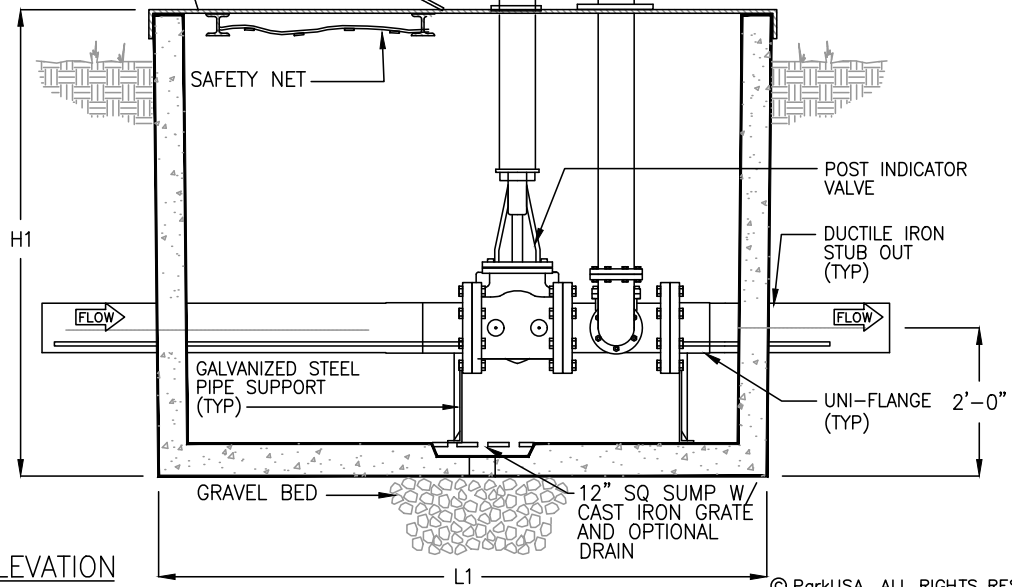
ALUMINUM DIAMOND PLATE FRAME AND COVER WITH 24"x32" HINGED MANWAY

FIRE DEPARTMENT
CONN.
ADJUSTABLE TYPE
INDICATOR POST
4" OR 6" FDC RISER



SECTION A-A

ELEVATION



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Specifications

- CONCRETE:** Class 1/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
- REINFORCEMENT:** Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.
- ACCESS COVER:** 1/4" skid-resistant aluminum floor plate welded to 3" angle frame with (2) 3"x2-3/8" I-beam supports. Hatch to be furnished with 316 stainless steel bolts and hinges

Engineering Data

The valve assembly shall be factory assembled in vault & hydrostatically tested prior to delivery. Field excavation & preparation shall be complete prior to delivery. Pipe, valves and fittings of the assembly shall be approved by one or more of the following associations:



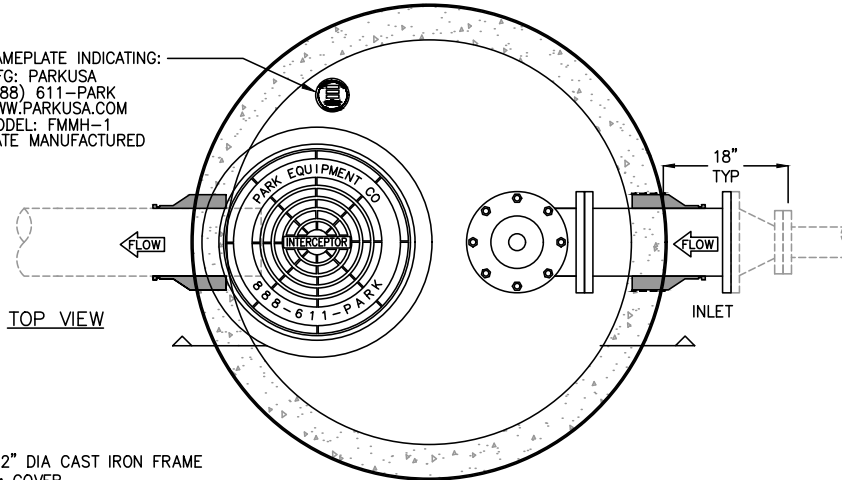
PROJECT: _____
 CUSTOMER: _____
 ENGINEER: _____
 ORDER #: _____
 PROJ #: _____
 DATE: _____



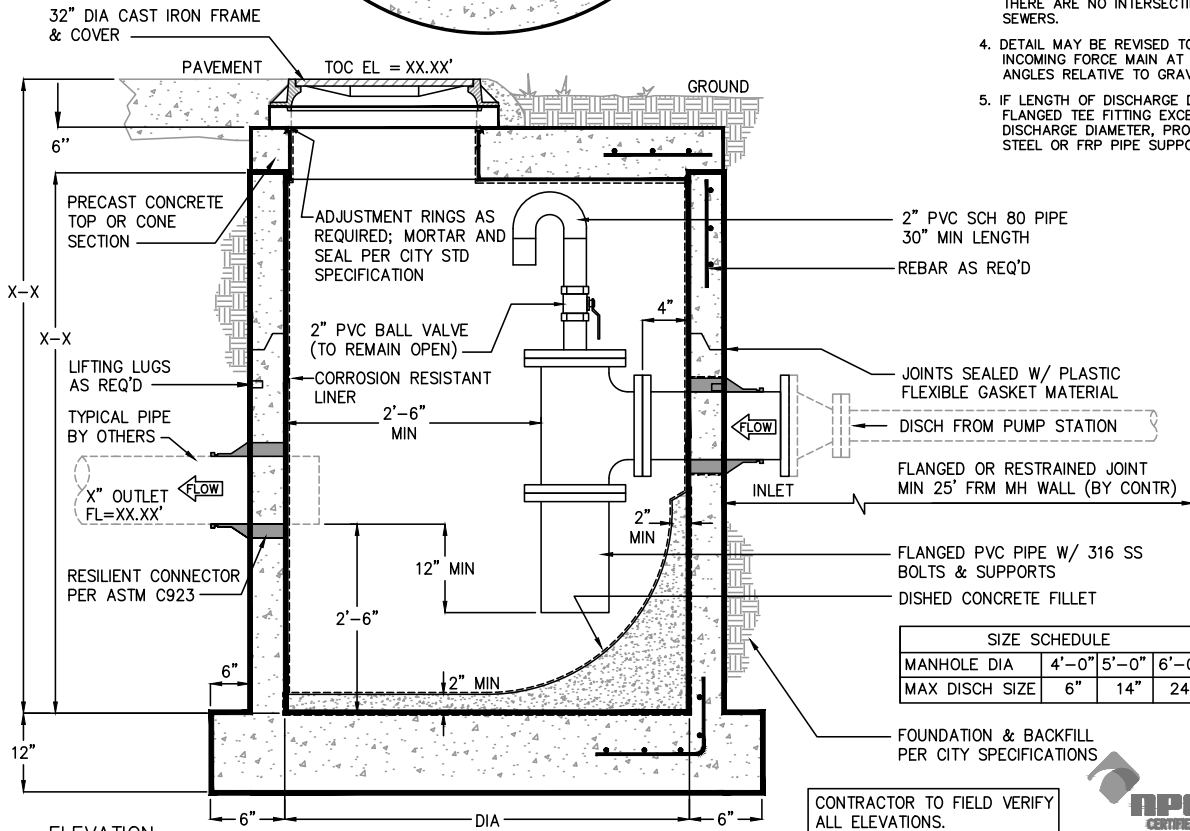
CHECK VALVE ASSEMBLY w/ 4" FDC & PIV
MODEL FDCPIV - 4" THRU 12"

PM	DRN	ENG	DWG. NO.	REV.
DATE	2018		FDCPIV-1	A

NAMEPLATE INDICATING:
MFG: PARKUSA
(888) 611-PARK
WWW.PARKUSA.COM
MODEL: FMMH-1
DATE MANUFACTURED



TOP VIEW



ELEVATION

NOTES:

1. SEAT MANHOLE FRAME IN SEALANT PER COH STANDARD SPECIFICATION.
2. IF FORCE MAIN HAS BENDS WITHIN 25 FT OF MANHOLE, EXTEND RESTRAINED JOINTS TO 25 FT MINIMUM OF BEND.
3. OMIT CEMENT MORTAR WHEN MANHOLE IS LOCATED IN PAVED AREA.
4. MINIMUM REINFORCING IN BASE SHALL BE #5 @ 8" E.W.
5. PRECAST RINGS SHALL BE PROVIDED FOR A COMBINED ADJUSTMENT HEIGHT OF AT LEAST 12". THE TOTAL HEIGHT OF THE ADJUSTMENT RINGS SHALL NOT EXCEED 1'-6".

NOTES TO SPECIFIER:

1. INDICATE SIZE OF FORCE MAIN, INCREASER AND DISCHARGE EITHER ON THIS DETAIL OR ON PLAN AND PROFILE.
2. PROVIDE INVERT ELEVATIONS OR FORCE MAIN AND SEWER CONNECTIONS TO MH, ON THIS DETAIL OR PLAN AND PROFILE.
3. THIS DETAIL IS TO BE USED ONLY WHEN THERE ARE NO INTERSECTING GRAVITY SEWERS.
4. DETAIL MAY BE REVISED TO ORIENT INCOMING FORCE MAIN AT OTHER ANGLES RELATIVE TO GRAVITY SEWER.
5. IF LENGTH OF DISCHARGE DROPS BELOW FLANGED TEE FITTING EXCEEDING 7 TIMES DISCHARGE DIAMETER, PROVIDE STAINLESS STEEL OR FRP PIPE SUPPORT.

SIZE SCHEDULE			
MANHOLE DIA	4'-0"	5'-0"	6'-0"
MAX DISCH SIZE	6"	14"	24"

CONTRACTOR TO FIELD VERIFY ALL ELEVATIONS.



Specifications

CONCRETE: Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor, first stage of wall and baffle with sectional riser to required depth.

REINFORCEMENT: Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal. Structural design is based on AASHTO HS-20 loading.

ACCESS COVER: Manhole frames, covers or grates are manufactured of grey cast iron conforming to ASTM A48-76 Class 35. Manhole shall have 24 inch inside diameter and be traffic duty.

Engineering Data

Manhole Station is structurally and hydraulically engineered conforming to Uniform Plumbing Code and ASTM C-478.

Field excavation and preparation shall be completed prior to delivery of the septic tank. Use dimensional data as shown.

PROJECT: _____

CUSTOMER: _____

ENGINEER: _____

ORDER #: _____

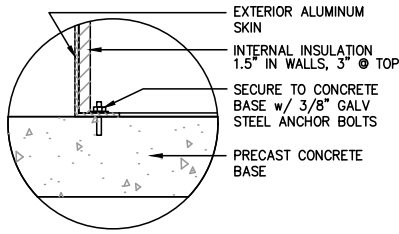
PROJ #: _____

DATE: _____

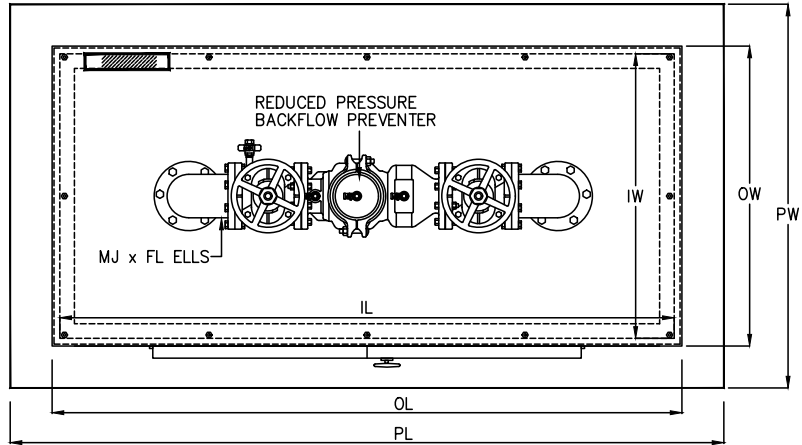


FORCE MAIN DISCHARGE MANHOLE
W/ CORROSION RESISTANT LINER
MODEL FMMH

SCALE	NONE	DWG. NO.	REV.
DATE	2018	FMMH-1	A



MOUNTING DETAIL



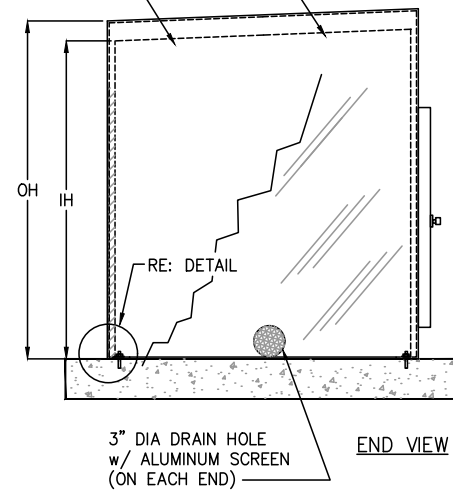
TOP VIEW

MODEL NO.	BFP SIZE	INSIDE DIMENSIONS			OUTSIDE DIMENSIONS			DOOR SIZE			PAD DIMENSIONS			"PC" PIPE CENTERS
		IL	IW	IH	OL	OW	OH	DH	DW	PL	PW	PT		
RPBPAE-2.5	2½"	72"	22"	38"	75"	25"	41"	26¼"	38"	100"	40"	6"	42"	
RPBPAE-03	3"	86"	26"	44"	89"	29"	47"	28¼"	44"	100"	40"	6"	43"	
RPBPAE-04	4"	86"	26"	44"	89"	29"	47"	28¼"	44"	100"	40"	6"	50⅝"	
RPBPAE-06	6"	97"	33"	61"	100"	36"	64"	38¼"	64"	114"	50"	6"	60¾"	
RPBPAE-08	8"	97"	33"	61"	100"	36"	64"	38¼"	64"	114"	50"	6"	78¾"	
RPBPAE-10	10"	120"	38"	64"	123"	41"	67"	38¼"	64"	134"	52"	6"	85¾"	

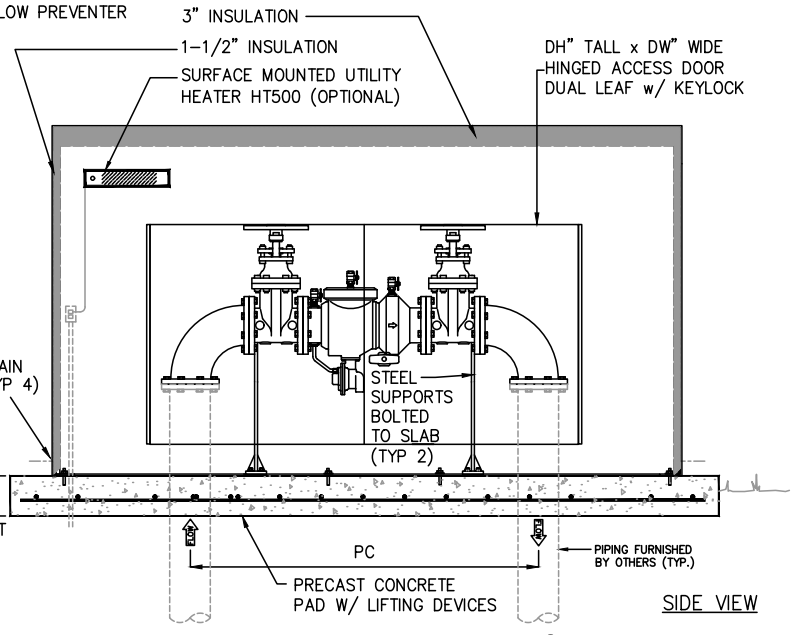
NOTE: SIZE MAY VARY DEPENDING ON MODEL OF BACKFLOW PREVENTER

HIGH PERFORMANCE INSULATION

TOP TO BE SLOPED TO SHED WATER



END VIEW



SIDE VIEW

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Specifications

GENERAL

The Model ERP aluminum enclosure is pre engineered to provide protection to backflow preventers, meters, pumps, and other devices installed above ground. These water conveying devices are subject to freezing and vandalism. The enclosure is designed to be installed over the equipment after installation. The enclosure is equipped with access doors to provide adequate access to the equipment.

CONSTRUCTION

The enclosure shall be manufactured from all new materials. The exterior shall be fabricated with 0.090 aluminum, continuously welded. The access door(s) shall be of like material and hinged with a continuous hinge. The door shall be equipped with a 3-point locking mechanism. The interior of the enclosure shall be structurally lined with high performance, non-wicking insulation.

HEATER

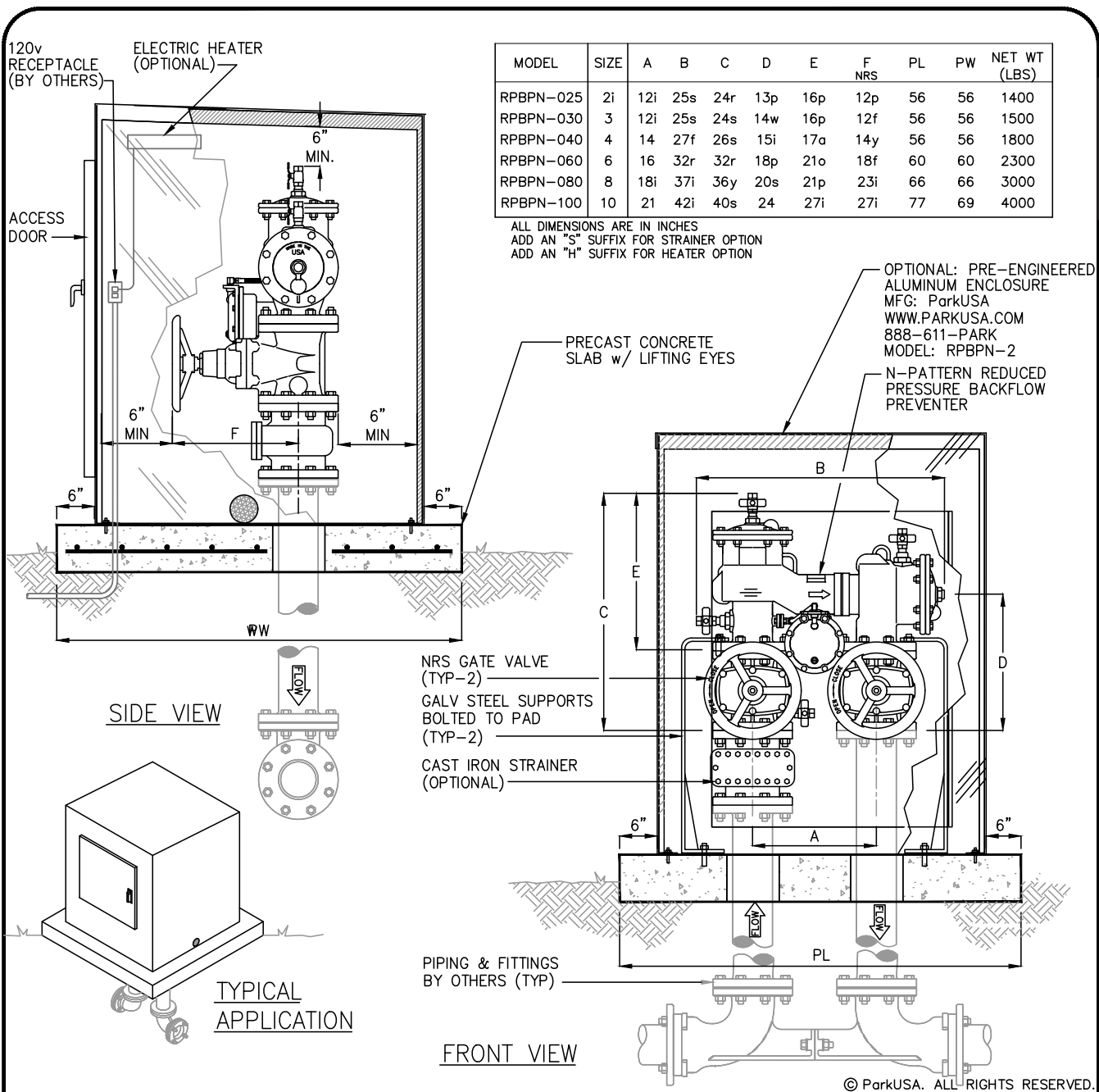
Interior heaters (if required) shall be thermostatically controlled and be mounted to the interior wall of the enclosure. A GFI receptacle shall be provided by others to provide power to the electric heater.

PROJECT: _____
 CUSTOMER: _____
 ENGINEER: _____
 ORDER #: _____
 PROJ #: _____
 DATE: _____



WEATHERPROOF ENCLOSURE FOR RPZ BACKFLOW PREVENTER

RPBPAE-1	PM	DRN	ENG	DWG. NO.	RPBPAE-1	REV.
	DATE	2018				A



MODEL	SIZE	A	B	C	D	E	F	PL	PW	NET WT (LBS)
RPBPN-025	2i	12i	25s	24r	13p	16p	12p	56	56	1400
RPBPN-030	3	12i	25s	24s	14w	16p	12f	56	56	1500
RPBPN-040	4	14	27f	26s	15i	17a	14y	56	56	1800
RPBPN-060	6	16	32r	32r	18p	21o	18f	60	60	2300
RPBPN-080	8	18i	37i	36y	20s	21p	23i	66	66	3000
RPBPN-100	10	21	42i	40s	24	27i	27i	77	69	4000

ALL DIMENSIONS ARE IN INCHES
ADD AN "S" SUFFIX FOR STRAINER OPTION
ADD AN "H" SUFFIX FOR HEATER OPTION

OPTIONAL: PRE-ENGINEERED ALUMINUM ENCLOSURE
MFG: ParkUSA
WWW.PARKUSA.COM
888-611-PARK
MODEL: RPBPN-2

N-PATTERN REDUCED PRESSURE BACKFLOW PREVENTER

NRS GATE VALVE (TYP-2)
GALV STEEL SUPPORTS BOLTED TO PAD (TYP-2)
CAST IRON STRAINER (OPTIONAL)

PIPING & FITTINGS BY OTHERS (TYP)

Specifications
CONCRETE: Class I/II concrete with design strength of 4500 PSI at 28 days.
REINFORCEMENT: Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.

Typical Applications
RP devices are used to protect against high hazard (toxic) fluids in water services to industrial plants, hospital facilities, morgues, mortuaries, and chemical plants. They are also used in irrigation systems, boiler feed, water lines and other installations requiring maximum protection.

Engineering Data
The backflow assembly shall be factory assembled on pad & hydrostatically tested prior to delivery. Field excavation & preparation shall be complete prior to delivery. Pipe, valves and fittings of the assembly shall be approved by one or more of the following associations:



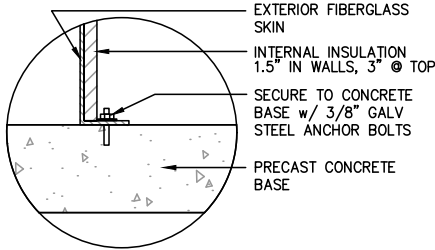
PROJECT: _____
CUSTOMER: _____
ENGINEER: _____
ORDER #: _____
PROJ #: _____
DATE: _____



N-PATTERN REDUCED PRESSURE BACKFLOW PREVENTER w/ INSULATED ENCLOSURE
MODEL RPBPN - 2 1/2" THRU 10"

PM	DRN	ENG	DWG. NO.	REV.
DATE	2018		RPBPN-2	A

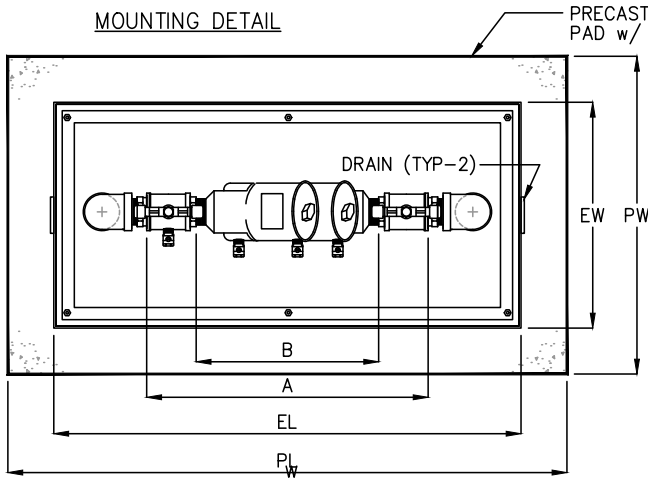
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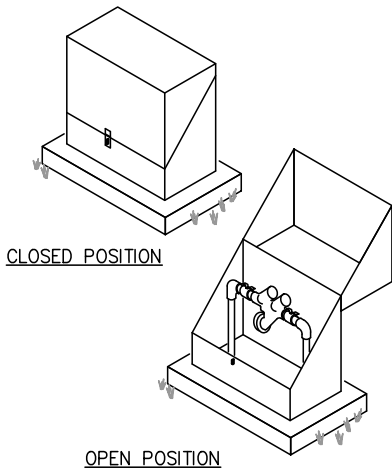
MODEL	SIZE	BACKFLOW DIMENSIONS					ENCLOSURE DIMENSIONS			PAD DIMENSIONS	
		A	B	C	D	E	EL	EW	EH	PL	PW
RPE-075	5"	12 1/4"	7 3/4"	4 1/8"	3 1/4"	28"	27"	13"	35"	42"	28"
RPE-100	1"	13p"	7 3/4"	4 1/8"	3 1/4"	28"	27"	13"	35"	42"	28"
RPE-125	1 1/4"	14 1/4"	7 3/4"	4 1/8"	3 1/4"	28"	39"	13"	35"	54"	28"
RPE-150	1 1/2"	18 1/4"	10 5/8"	5 1/4"	4 1/2"	28"	39"	13"	35"	54"	28"
RPE-200	2"	19"	10 5/8"	5 1/4"	3 1/4"	28"	39"	13"	35"	54"	28"

ALL DIMENSIONS ARE IN INCHES
ADD AN "S" SUFFIX FOR STRAINER OPTION
ADD AN "H" SUFFIX FOR HEATER OPTION

MOUNTING DETAIL



TOP VIEW



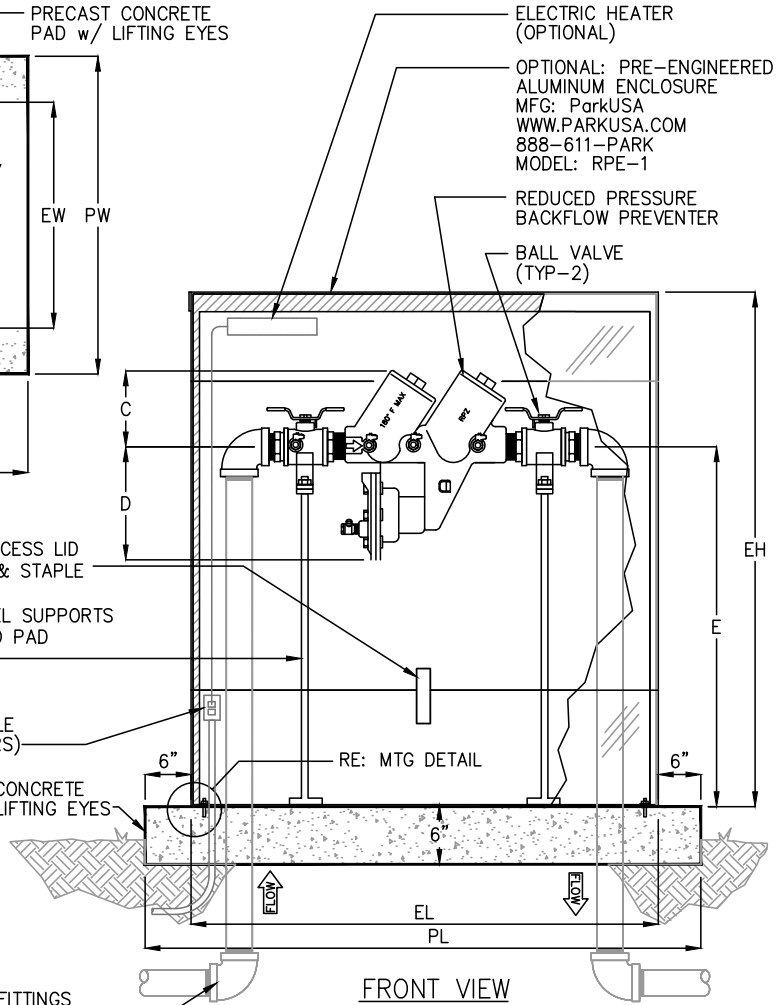
HINGED ACCESS LID w/ HASP & STAPLE

GALV STEEL SUPPORTS BOLTED TO PAD (TYP-2)

120v RECEPTACLE (BY OTHERS)

PRECAST CONCRETE SLAB w/ LIFTING EYES

PIPING & FITTINGS BY OTHERS (TYP)



FRONT VIEW

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Specifications

CONCRETE: Class I/II concrete with design strength of 4500 PSI at 28 days.

REINFORCEMENT: Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.

Typical Applications

RP devices are used to protect against high hazard (toxic) fluids in water services to industrial plants, hospital facilities, morgues, mortuaries, and chemical plants. They are also used in irrigation systems, boiler feed, water lines and other installations requiring maximum protection.

Engineering Data

The backflow assembly shall be factory assembled on pad & hydrostatically tested prior to delivery. Field excavation & preparation shall be complete prior to delivery. Pipe, valves and fittings of the assembly shall be approved by one or more of the following associations:

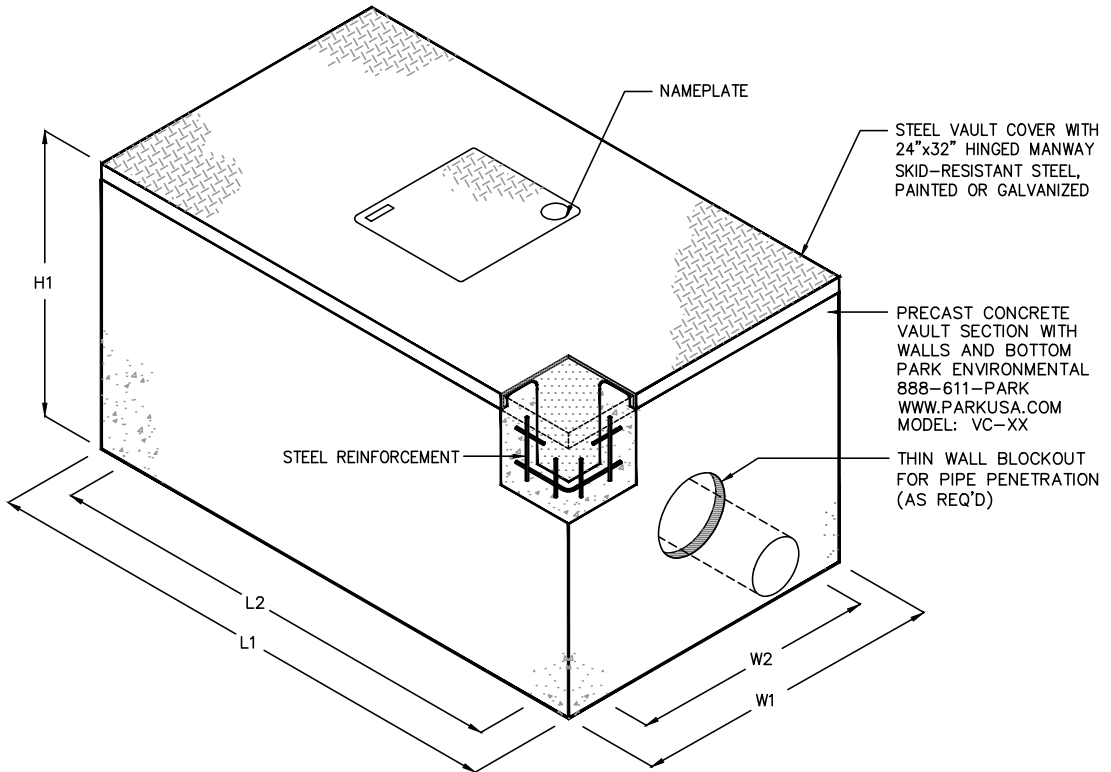


PROJECT: _____
 CUSTOMER: _____
 ENGINEER: _____
 ORDER #: _____
 PROJ #: _____
 DATE: _____



REDUCED PRESSURE BACKFLOW PREVENTER w/ INSULATED ENCLOSURE MODEL RPE - 3/4" THRU 2"

PM	DRN	ENG	DWG. NO.	REV.
			RPE-1	A
DATE			2018	



1 MODEL #		DIMENSIONS						WEIGHT LBS
STANDARD DUTY	HEAVY DUTY	L1	L2	W1	W2	H1		
VC-343	VC343-H	4'-0"	3'-6"	3'-0"	2'-6"	4'-0"	1,900	
VC-364	VC364-H	6'-0"	5'-6"	3'-6"	3'-0"	4'-0"	3,300	
VC-475	VC475-H	7'-10"	7'-2"	4'-4"	3'-8"	5'-6"	7,600	
VC-483	VC583-H	8'-8"	8'-0"	5'-0"	4'-4"	3'-6"	6,100	
VC-485	VC485-H	8'-8"	8'-0"	5'-0"	4'-4"	5'-6"	8,700	
VC-585	VC585-H	9'-2"	8'-2"	5'-8"	4'-8"	5'-6"	14,300	
VC-685	VC685-H	9'-0"	8'-0"	6'-0"	5'-0"	6'-0"	18,600	
VC-5104	VC5104-H	11'-0"	10'-0"	6'-0"	5'-0"	4'-6"	14,600	
VC-5106	VC5106-H	11'-0"	10'-0"	6'-0"	5'-0"	6'-6"	19,400	
VC-6124	VC6124-H	13'-0"	12'-0"	7'-0"	6'-0"	4'-6"	18,200	
VC-6126	VC6126-H	13'-0"	12'-0"	7'-0"	6'-0"	6'-6"	24,000	
VC-6154	VC6154-H	16'-0"	15'-0"	7'-0"	6'-0"	4'-6"	23,400	
VC-6156	VC6156-H	16'-0"	15'-0"	7'-0"	6'-0"	6'-6"	30,300	

1. STANDARD DUTY INDICATES PEDESTRIAN LOAD RATED, HEAVY DUTY IS TRAFFIC LOAD RATED.

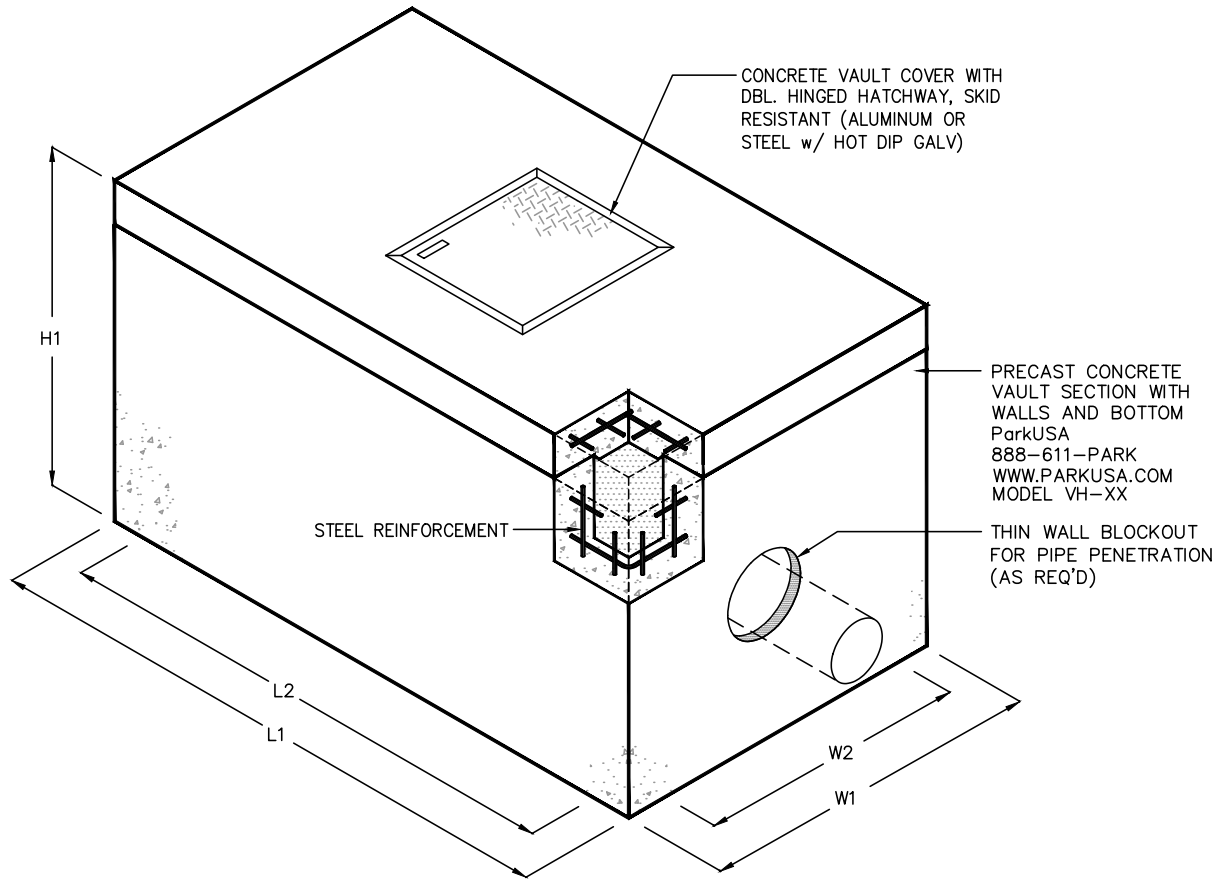
SPECIFICATIONS

- CONCRETE :** CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.
- REINFORCEMENT:** GRADE 60 REINFORCED. STEEL #4 REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL. BAR BENDING & PLACEMENT SHALL CONFORM TO LATEST ACI STANDARDS FOR PRECAST CONCRETE.
- STEEL COVER:** ALL STEEL FABRICATION SHALL BE IN ACCORDANCE TO AWA D1.1. STEEL SHALL BE ASTM A36 CARBON STEEL. FINISH IS PRIMER & PAINTED WITH INDUSTRIAL ENAMEL.



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PROJECT: .			
CUSTOMER: .			
ENGINEER: .			
ORDER #:		PROJ #:
DATE:		LOCATION: .
UTILITY VAULTS w/ STEEL COVER MODEL VC 343 THRU 6156			
PM	PC	DRN	ENG
DATE	07/2018		REV.
DWG. NO.			VC-1
			A



1 MODEL NO.		DIMENSIONS					WEIGHT LBS
STANDARD DUTY	HEAVY DUTY	L1	L2	W1	W2	H1	
VH-343	VH343-H	4'-0"	3'-6"	3'-0"	2'-6"	3'-9"	2,800
VH-364	VH364-H	6'-0"	5'-6"	3'-0"	2'-6"	3'-9"	4,600
VH-475	VH475-H	7'-10"	7'-2"	4'-4"	3'-8"	6'-0"	10,200
VH-483	VH583-H	8'-8"	8'-0"	5'-0"	4'-4"	3'-9"	9,400
VH-485	VH485-H	8'-8"	8'-0"	5'-0"	4'-4"	6'-0"	12,000
VH-585	VH585-H	9'-2"	8'-2"	5'-8"	4'-8"	6'-0"	18,200
VH-685	VH685-H	9'-0"	8'-0"	6'-0"	5'-0"	6'-0"	18,600
VH-5104	VH5104-H	11'-0"	10'-0"	6'-0"	5'-0"	4'-9"	19,600
VH-5106	VH5106-H	11'-0"	10'-0"	6'-0"	5'-0"	7'-0"	24,400
VH-6124	VH6124-H	13'-0"	12'-0"	7'-0"	6'-0"	5'-0"	25,000
VH-6126	VH6126-H	13'-0"	12'-0"	7'-0"	6'-0"	7'-0"	30,800
VH-6154	VH6154-H	16'-0"	15'-0"	7'-0"	6'-0"	5'-0"	31,800
VH-6156	VH6156-H	16'-0"	15'-0"	7'-0"	6'-0"	7'-0"	38,700

1. STANDARD DUTY INDICATES PEDESTRIAN LOAD RATED, HEAVY DUTY IS TRAFFIC LOAD RATED.

SPECIFICATIONS

CONCRETE: CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.

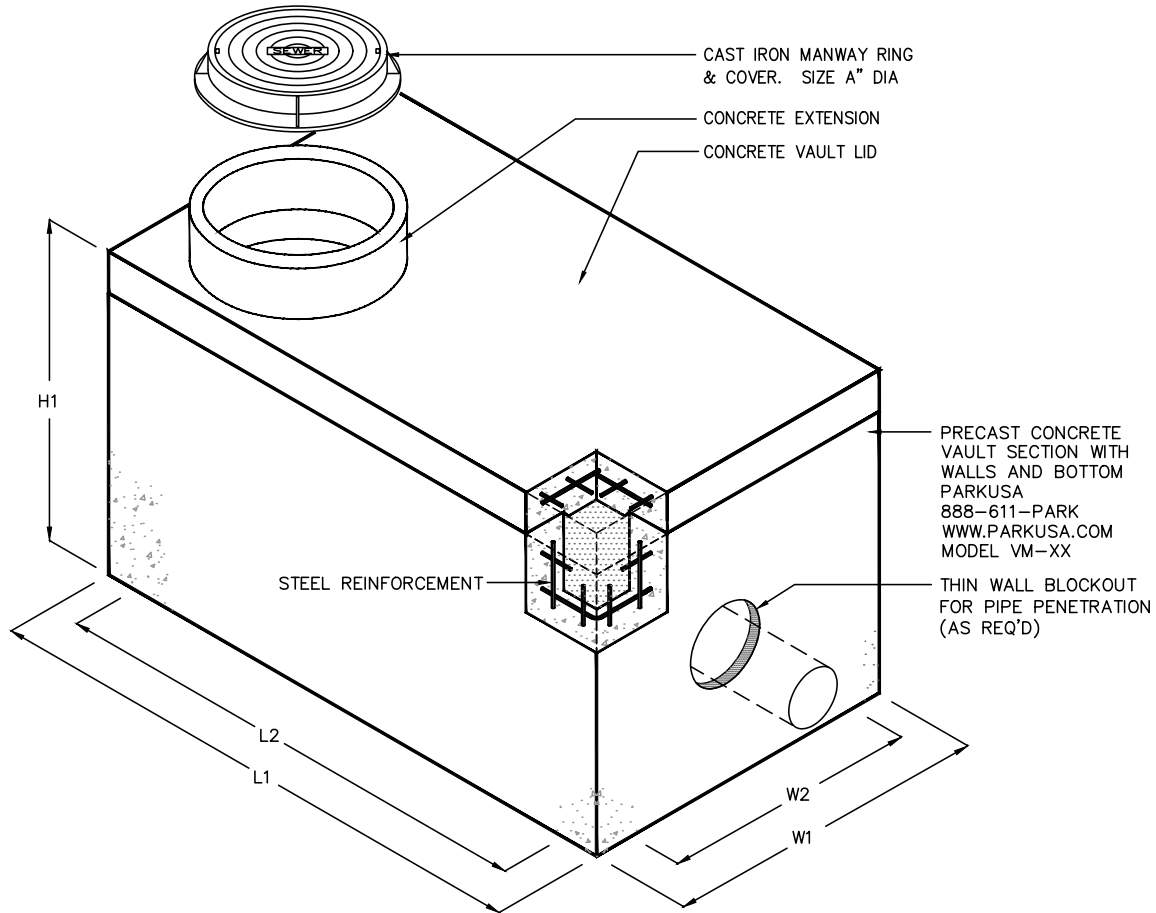
REINFORCEMENT: GRADE 60 REINFORCED. STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL. BAR BENDING & PLACEMENT SHALL CONFORM TO LATEST ACI STANDARDS FOR PRECAST CONCRETE.

HATCHWAY: 1/4" ALUMINUM SKID RESISTANT DIAMOND PLATE, WITH 1/4" EXTRUDED ALUMINUM FRAME. HATCH TO BE FURNISHED WITH DROP HANDLE, SS HINGES, & LOCKING ARM.



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PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: . LOCATION: .	
UTILITY VAULTS w/CONCRETE TOP & HATCH MODEL VH	
PM .	PC .
DRN .	ENG .
DWG. NO. VH-1	
DATE 07/2018	REV. A



1 MODEL NO.		DIMENSIONS					WEIGHT LBS
STANDARD DUTY	HEAVY DUTY	L1	L2	W1	W2	H1	
VM-343	VM343-H	4'-0"	3'-6"	3'-0"	2'-6"	3'-9"	2,800
VM-364	VM364-H	6'-0"	5'-6"	3'-0"	2'-6"	3'-9"	4,600
VM-475	VM475-H	7'-10"	7'-2"	4'-4"	3'-8"	6'-0"	10,200
VM-483	VM583-H	8'-8"	8'-0"	5'-0"	4'-4"	3'-9"	9,400
VM-485	VM485-H	8'-8"	8'-0"	5'-0"	4'-4"	6'-0"	12,000
VM-585	VM585-H	9'-2"	8'-2"	5'-8"	4'-8"	6'-0"	18,200
VM-685	VM685-H	9'-0"	8'-0"	6'-0"	5'-0"	6'-0"	18,600
VM-3105	VM3105-H	11'-0"	10'-0"	4'-0"	3'-0"	6'-0"	19,000
VM-5104	VM5104-H	11'-0"	10'-0"	6'-0"	5'-0"	5'-0"	19,600
VM-5106	VM5106-H	11'-0"	10'-0"	6'-0"	5'-0"	7'-0"	24,400
VM-6124	VM6124-H	13'-0"	12'-0"	7'-0"	6'-0"	5'-0"	25,000
VM-6126	VM6126-H	13'-0"	12'-0"	7'-0"	6'-0"	7'-0"	30,800
VM-6154	VM6154-H	16'-0"	15'-0"	7'-0"	6'-0"	5'-0"	31,800
VM-6156	VM6156-H	16'-0"	15'-0"	7'-0"	6'-0"	7'-0"	38,700

1. STANDARD DUTY INDICATES PEDESTRIAN LOAD RATED, HEAVY DUTY IS TRAFFIC LOAD RATED.

SPECIFICATIONS

CONCRETE : CLASS 1/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT: GRADE 60 REINFORCED. STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL. BAR BENDING & PLACEMENT SHALL CONFORM TO LATEST ACI STANDARDS FOR PRECAST CONCRETE.

MANWAY : MANHOLE FRAME AND COVER ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.



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PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: .	LOCATION: .
UTILITY VAULTS w/ CONCRETE TOP & MANWAY MODEL VM	
PM .	PC .
DRN .	ENG .
DWG. NO. VM-1	
DATE 07/2018	REV. A



Cross Connection Control

The ParkUSA® BackFlo™ is a water cross connection prevention system designed to protect the public water supply from hazardous cross contamination.

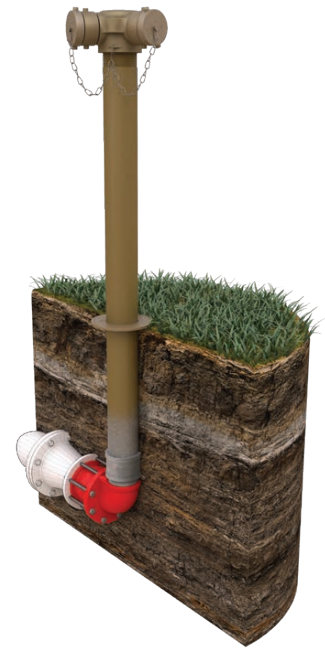
Our modern community water supply system is designed to ensure that water flows to properties and buildings under pressure. A community water network contains many users. There is a risk to public health if a connection between the water supply and a contaminated source occurs. A cross-connection can occur where there is a pressure drop in the water main. This pressure drop causes a vacuum and siphons of entrainment water from end-users into the public water supply. The backflow preventer is generally located inside the property line of the end-user's facility and is installed in a concrete vault or on a concrete pad for protection and accessibility.

Municipalities around the country may require unique cross connection arrangements and specifications. Engineers rely on ParkUSA's code knowledge and technical expertise to specify the right equipment.

BACKFLO[®]
WATER CROSS CONNECTION

Features

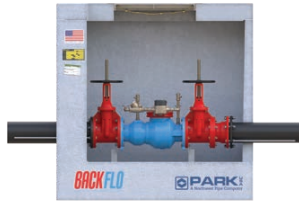
- Various models for different applications available
- Completely pre-assembled for easy installation
- Easy maintenance
- Precast concrete vault or pad and insulated enclosure
- Long-lasting and dependable service
- Only certified equipment used for construction



WD | BACKFLO
Standard



Double Check



Double Detector



Single Detector Check



Reduced Pressure Backflow

Types of Devices

Single Detector Checks: are used in the protection of potable water supplies from unauthorized water usages, or theft. This check valve device is not a backflow preventer, and should not be used for cross-connection control. In a non-flow condition, the check valves in the by-pass and mainline unit are closed. Flows from 0 to 10 GPM will flow through the metered bypass. The water meter will record the illicit water usage. This operation, at low flow rates, is accomplished by designing the differential pressure drop across the bypass line to be slightly less than the mainline check valves. Flows in excess of 10 GPM open the mainline check valve for normal flow.

Double Check Backflow Preventers (BP): are used in the protection of potable water supplies from backflow. In a non-flow condition, the check valves hold a 1 PSI minimum in the direction of flow. In a flow condition, the check valves are open proportional to the flow demand. In a backflow condition, the check valves close until the resumption of normal flow.

Double Detector Check Backflows (DDBP): are used in the protection of potable water supplies from backflow and unauthorized water usage. In a non-flow condition, check valves in the by-pass and mainline units are closed. Flows from 0 to 5 GPM will flow through the metered bypass. The water meter will record the illicit water usage. This operation at low flow rates is accomplished by designing the differential pressure drop across the bypass line to be slightly less than the mainline check valves. Flows in excess of 5 GPM open the mainline check valves for normal flow.

Reduced Pressure Backflow Preventers (RPZ): are used in the protection of potable water supplies from backflow, typically in high-hazard applications. In a flow condition, the check valves are open with the pressure between the checks, called the zone, being maintained at least 5 PSI lower than the inlet pressure, with the relief valve maintained closed. Should abnormal conditions arise under no flow or reversal of flow, the differential relief valve will open and discharge (to atmosphere) to maintain the zone at least 3 PSI lower than the supply. In resumption of normal flow, the zone's differential pressure will resume and the relief valve will close.

Visit backflo.parkusa.com for more information and design assistance.

To request a quote or catalog, visit request.parkusa.com.

How it Works

A backflow preventer is a check valve device that's installed on a potable piping system that allows water to flow in one direction, but never in the opposite direction. Its sole purpose is to prevent drinking water from being contaminated due to backflow.

Backflow of water is caused by the pressure differential between the upstream (water main) and the downstream of the backflow device.

Water pressure can be affected when:

- There is a break in the water main.
- Water is being pumped from the main water supply during a fire.
- A customer is using water at a higher pressure than the pressure supplied.
- Heavy water use downstream reduces water pressure upstream.
- The water outlet at the property is higher than the water main, causing constant back pressure.



Municipal



Commercial

APPLICATIONS



Industrial



Medical Facilities

**BREAK
TANK**[®]
Water Storage Tank



PARK
USA
A Northwest Pipe Company

**ENGINEERING
FACTS**

GENERAL INFORMATION

The ParkUSA BreakTank™ is a packaged water storage system complete with tank, controls, and fill valves. A BreakTank is a necessary component in multilevel buildings to provide adequate water needs for Fire, Domestic, & Irrigation systems.

ParkUSA has fabricated BreakTanks for more than 25 years in accordance with the American Welding Society Specifications, AISC, NFPA, and the Uniform Building Code.

The fabrication of reliable and durable products requires knowledge, experience and investment. The Engineering team at ParkUSA designs break-tanks that are fabricated for project specifications and size requirements to meet all individual needs. Complete fabrication is performed at our Houston plant with certified material and personnel. Factory coating and abrasive blasting are performed in our new High-Tech blast/paint facility, offering excellent corrosion and abrasion resistance.

BREAKTANK MODELS



Domestic Break-Tank



Combination Break-Tank



FIRE Break-Tank

FEATURES

- Structurally & Hydraulically Engineered
- A36 Steel Construction
- Manways
- Interior & Exterior Ladders
- Stiling Wells
- Interior ANSI/NSF Protective Coatings
- Exterior Rust Inhibitors
- 150 PSI Flanges
- Anti-Vortex Plate
- Split Float Access Panels
- Fill, Suction, Vent and Drain

The ParkUSA BreakTank™ is a packaged water storage system complete with tank, controls, and fill valves. A BreakTank is a necessary component in multilevel buildings to provide adequate water needs for Fire, Domestic, & Irrigation systems.

BREAKTANK MODELS

Many cities prohibit pumping directly from the city water mains to prevent low system water pressure and damage to public water lines. The break-tank enables water storage and supply for the building's use while eliminating the potential for contamination of the city water supply. By providing a physical "air-gap" between the city water service and the building, this product eliminates the potential of back-syphonage and backflow to the city service lines. The current models for the ParkUSA BreakTank are detailed below.

Domestic BreakTank

The domestic BreakTank is utilized for multilevel buildings where water storage is required to prevent low system water pressure and damage to public water lines. Many cities are prohibiting from pumping directly from the city water mains to prevent low system water pressure and damage to public water lines. The break-tank provides water storage and supply for the building general uses.

Combination BreakTank

The combination BreakTank is divided by a partition with one compartment for fire protection water and the other for domestic water. The partition is double-walled and extends to the top of the tank. Each wall of the partition is sealed with a continuous weld between the wall and four sides of the tank. A verifiable airdrop is contained between these two tanks to ensure no cross-contamination.

Fire BreakTank

The ParkUSA Fire BreakTank is a system designed to provide quick access to water, which is to be used in fire events or disaster relief. Nowadays, building codes and guidelines require a comprehensive fire prevention and control system. This unit aims to provide the solution on a control system for immediate assistance during a fire event in any type of multilevel buildings. Advantages of a ParkUSA Fire BreakTank, include:

- Multilevel building use
- Immediate water accessibility
- Water storage
- Eliminates Backflow potential
- Prevent contamination on city water supply

SYSTEM COMPONENTS

The ParkUSA BreakTank is available with the following components:

- High/Low level alarm
- Alarm panel
- Pump
- Sight glass
- Ladders
- Manway
- Anti-Vortex

Also available with the optional features:

- Water Level Sight Gauges
- Level Probes or Floats
- UL Control Panel/Alarm
- Fill Valves
- Stainless Steel Construction



DESIGN CONSIDERATIONS

The BreakTank shall be divided with a partition with one compartment for Fire Protection Water and the other for Potable Water (Only Where Domestic Storage is Utilized). The partition shall be of the double wall type extending to the top of the tank, each wall of the partition shall be sealed with a continuous weld between the wall and four sides of the tank. There shall be an air space between the walls of the partition of not less than 4 inches for tanks with a height of 10 feet or less. For tanks over 10 feet in height, the space between the walls of the partition shall be not less than 6 inches. A non-threaded opening shall be provided at the bottom of the partition to give visual evidence of loss of integrity of the wall of the partition. The air space between the partition walls shall be given a one psi air test with all welds soaped to assure no leaks in the partition chamber. Tank fabricator shall furnish a notarized certificate of compliance with this test. A metal nameplate indicating the name of manufacturer, date of manufacture and serial number of the tank shall be permanently affixed to the tank. The manufacturer of the tank shall have no less than five years of experience building 3,500 gallon or larger potable water tanks. No subcontracting of tank will be permitted. A list of installations of such tanks shall be furnished as required by the engineer. The tanks shall be constructed entirely of new materials to assure against the possibility of contamination from previous usage.

The BreakTank shall be equipped with steel 24 inches by 24 inches gasketed and bolted manway. The tank shall be provided with an overflow piped to the overflow pit. The overflow shall include a return bend vent top, the same size as the overflow. The vent opening and overflow riser shall be covered with a stainless-steel screen of not less than 100 mesh. To provide an air gap, the top at the overflow riser shall be not less than 2 inches below the fill connections.

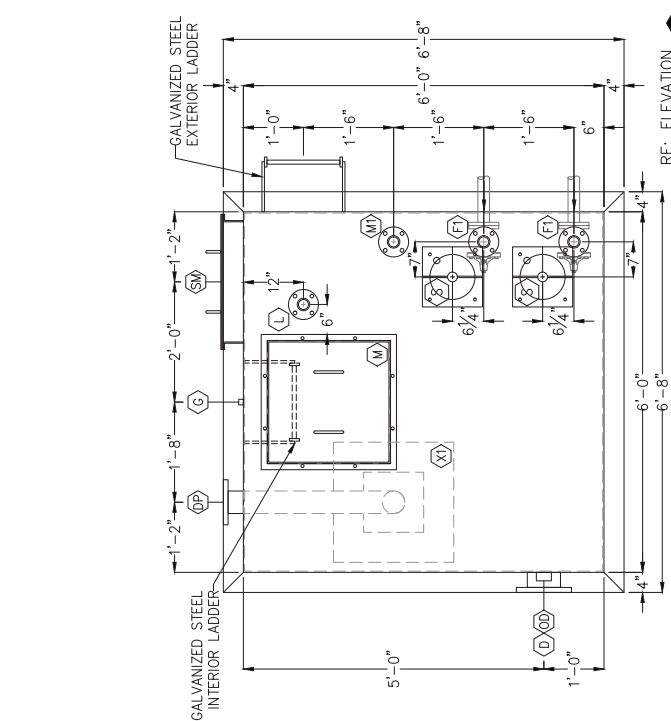
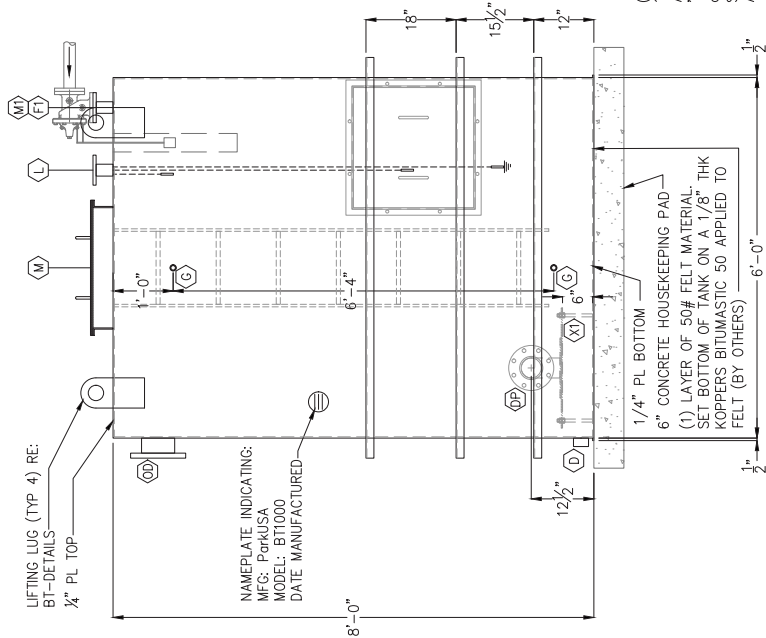
MAINTENANCE

The break tank shall be installed on an equipment (housekeeping) pad, with the bottom of the tank in a ½-inch thick Koppers Bitumastic 50 that covers the area of the equipment pad.

At installation and at maintenance, the unit should be thoroughly cleaned the inside and outside, and verify that all vermin screens and other required trims are installed prior to filling tank. Adjust level alarms, fill valves and secure manway cover prior to operation.

The unit will require an annual inspection to verify proper operation. The ParkUSA BreakTank includes a 50 year warranty.

Symbol	Function	Type	Size	Qty	Symbol	Function	Size	Type	Qty
OP	DOMESTIC PUMP	150# RFSO FLANGED	4"	1	(F)	AUTOMATIC FILL - ANGLE - CLA-VAL	2"	150# RFSO FLANGE	2
OD	OVERFLOW - DOMESTIC	150# RFSO FLANGED	6"	1	(M)	MANUAL FILL - FIRE	2"	150# RFSO FLANGE	1
D	DRAIN	3000# FS HALF COUPLING	2"	1	(X)	ANTI-VORTEX PLATE	24"x24"	FABRICATED	1
L	LIQUID LEVEL PROBE	150# RFSO FLANGE	2"	1	(SM)	SIDE MANWAY	24"x24"	FABRICATED BOLTED & GASKETED W/GALVANIZED COVER	1
M	MANWAY	FABRICATED BOLTED & GASKETED W/ GALVANIZED COVER	24"x24"	1	(S)	SPLITRING	12"x12"	FABRICATED	2
G	SITE GAUGE	3000# FS HALF COUPLING	1/2"	2					



(1) Tank Required as Shown 6'-0" X 6'-0" X 8'-0" Tall
1000 Gallon Domestic Empty Wt. 3,400 LBS
All structural steel materials shall conform to ASTM A36,
"Specifications for Structural Steel". All steel pipe shall
conform to ASTM A53B, "Specifications for Welded and
Seamless Pipe". Tank shall be coated as per specification
AWWA Specification D102-78, System 1.



DATE: . . .	REVISION: . . .	PROJECT: . . .
DESIGNER: . . .	REVISION DATE: . . .	CUSTOMER: . . .
DRAWN: . . .	DRAWING NO. 10000568-STD	
DOMESTIC WATER BREAK TANK		

Domestic & Fire Water



TITLE: FIRE WATER BREAK TANK
PROJECT: _____
CUSTOMER: _____

DATE: 10/08/14
REVISION: _____
DRAWING NO.: 250F5876-STANDARD



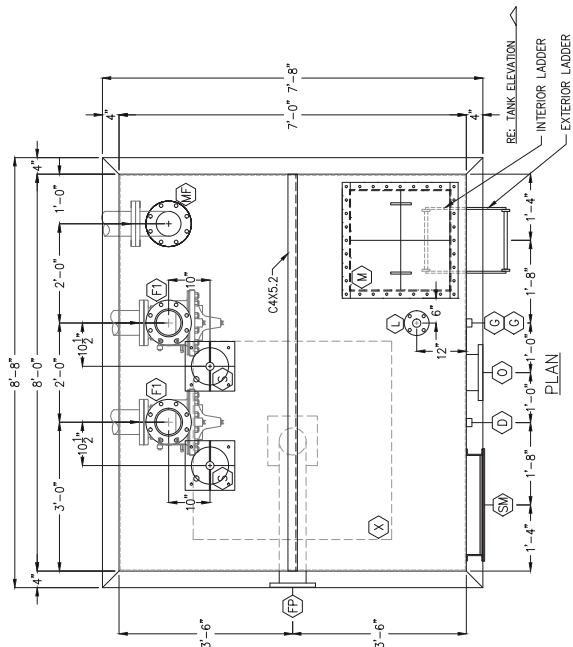
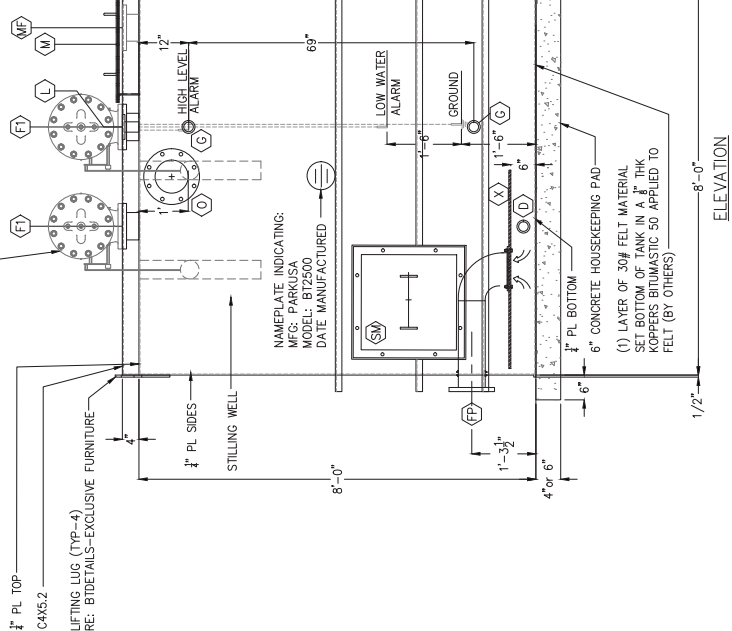
Schedule

Symbol	Function	Size	Type	Qty
(FP)	FIRE PUMP	6"	150# RF50 FLANGE	1
(O)	OVERFLOW	8"	150# RF50 FLANGE	1
(D)	DRAIN	2"	3000# FS HALF COUPLING	1
(L)	LIQUID LEVEL CONTROL	2"	3000# FS HALF COUPLING	1
(M)	MANWAY	24"x24"	FABRICATED BOLTED & GASKETED W/GALVANIZED COVER	1
(F)	FLOAT FILL VALVE	6"	150# RF50 FLANGE	1
(G)	SIGHT GLASS GAUGE	1/2"	3000# FS HALF COUPLING	2
(S)	SPLITTING	12"x12"	FABRICATED	1
(X)	ANTI-VORTEX	48"x48"	FABRICATED (GALV)	1
(SW)	SIDE MANWAY	24"x24"	FABRICATED BOLTED & GASKETED W/GALVANIZED COVER	1
(MF)	MANUAL FILL	6"	150# RF50 FLANGE	1

RELEASE FOR FABRICATION
THIS DRAWING IS BEING SUBMITTED FOR APPROVAL FOR FABRICATION. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS & ELEVATIONS.
APPROVED BY: _____ DATE: _____
COMPANY NAME: _____
FAX TO: 713-937-4254

NOTE: ALL PIPE FLANGES, STEES AND PLACEMENTS ARE TO BE DETERMINED AND VERIFIED BY CONTRACTOR PRIOR TO FABRICATION

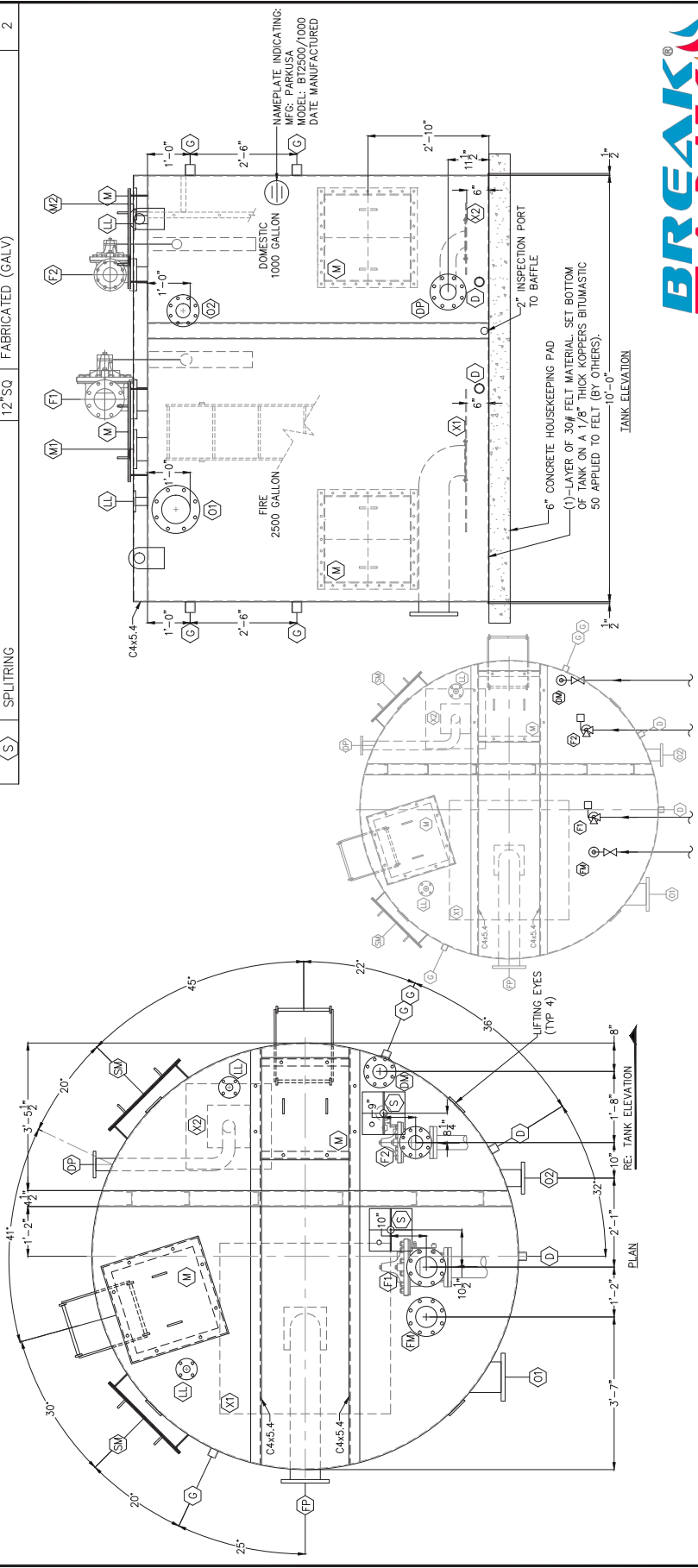
FLOAT VALVE AND PIPING SHOWN FOR VISUAL AID ONLY. FLOAT VALVES FURNISHED LOOSE BY PARK; PIPING AND FITTINGS FURNISHED AND INSTALLED BY OTHERS.



Tank Elevation
(1) Tank Required as Shown 8'-0" x 7'-0" x 8'-0" HIGH EMPTY WT. 3,800 LBS. 2500 GALLONS
All structural steel materials shall conform to ASTM A36. "Specifications for Structural Steel".
All steel pipe shall conform to ASTM A53B. "Specifications for Welded and Seamless Pipe".
Tank shall be coated as per specification AWSK Specification D102-76, System 1.

Schedule

Symbol	Function	Size	Type	Qty	Symbol	Function	Size	Type	Qty
(F)	AUTOMATIC FILL - FIRE - ANGLE	6"	150# RFSO FLANGED	1	(M)	MANWAY	24" SQ	FABRICATED BOLTED AND GASKETED	2
(FM)	MANUAL FILL - FIRE	6"	150# RFSO FLANGED	1	(O1)	OVERFLOW	8"	150# RFSO FLANGED	1
(OM)	MANUAL FILL - DOMESTIC	4"	150# RFSO FLANGED	1	(O2)	OVERFLOW	4"	150# RFSO FLANGED	1
(E2)	AUTOMATIC FILL - DOMESTIC - ANGLE	4"	150# RFSO FLANGED	1	(G)	SIGHT GAUGE CONNECTION	1/2"	3000# SS HALF COUPLING	4
(LL)	LIQUID LEVEL CONTROL	2"	150# RFSO FLANGED	2	(DP)	DOMESTIC PUMP	3"	150# RFSO FLANGED	1
(X)	ANTI-VORTEX PLATE	48" SQ	FABRICATED (GALV)	1	(FP)	FIRE PUMP	8"	150# RFSO FLANGED	1
(X2)	ANTI-VORTEX PLATE	24" SQ	FABRICATED (GALV)	1	(D)	DRAIN	2"	3000# FS HALF COUPLING	2
					(S)	SPLITTING	12" SQ	FABRICATED (GALV)	2

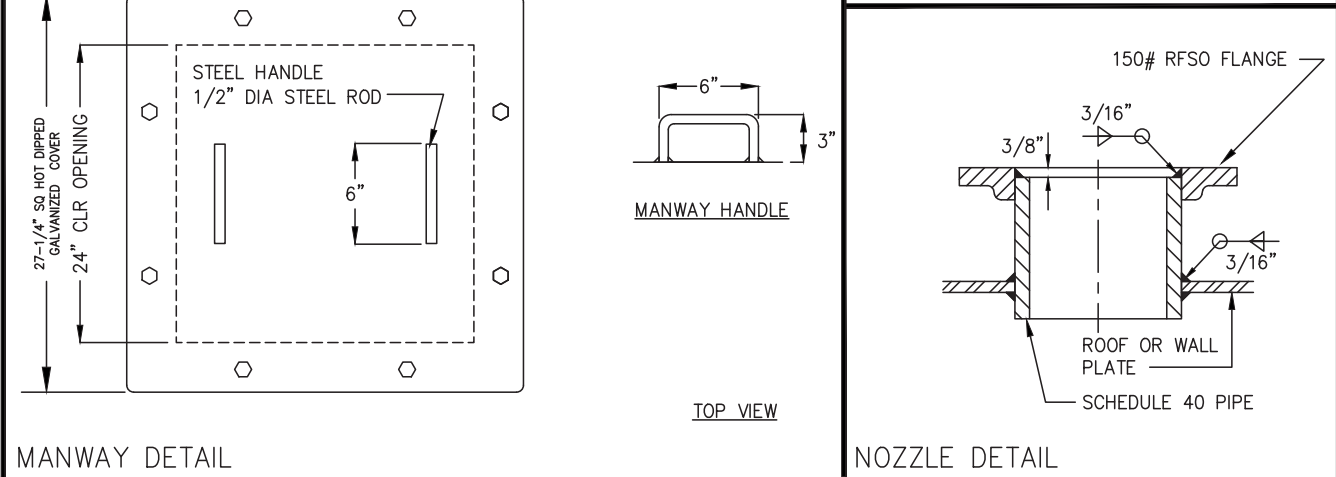
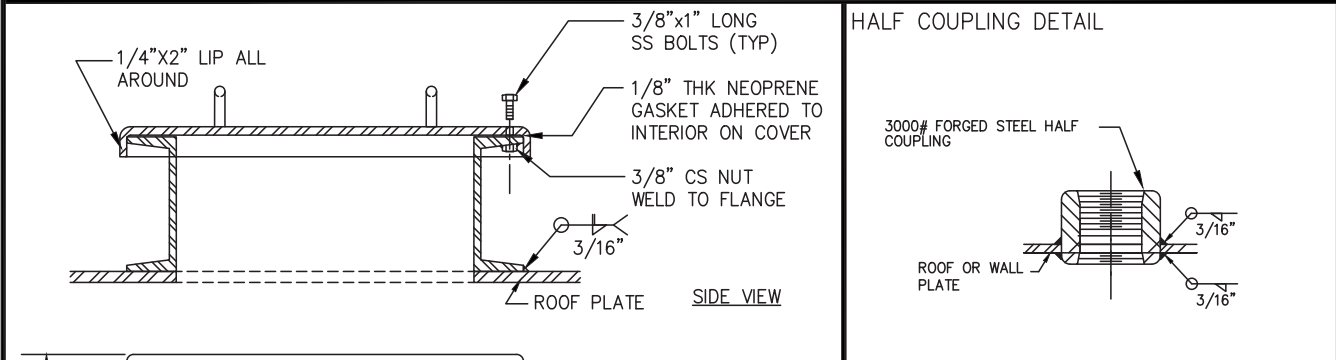
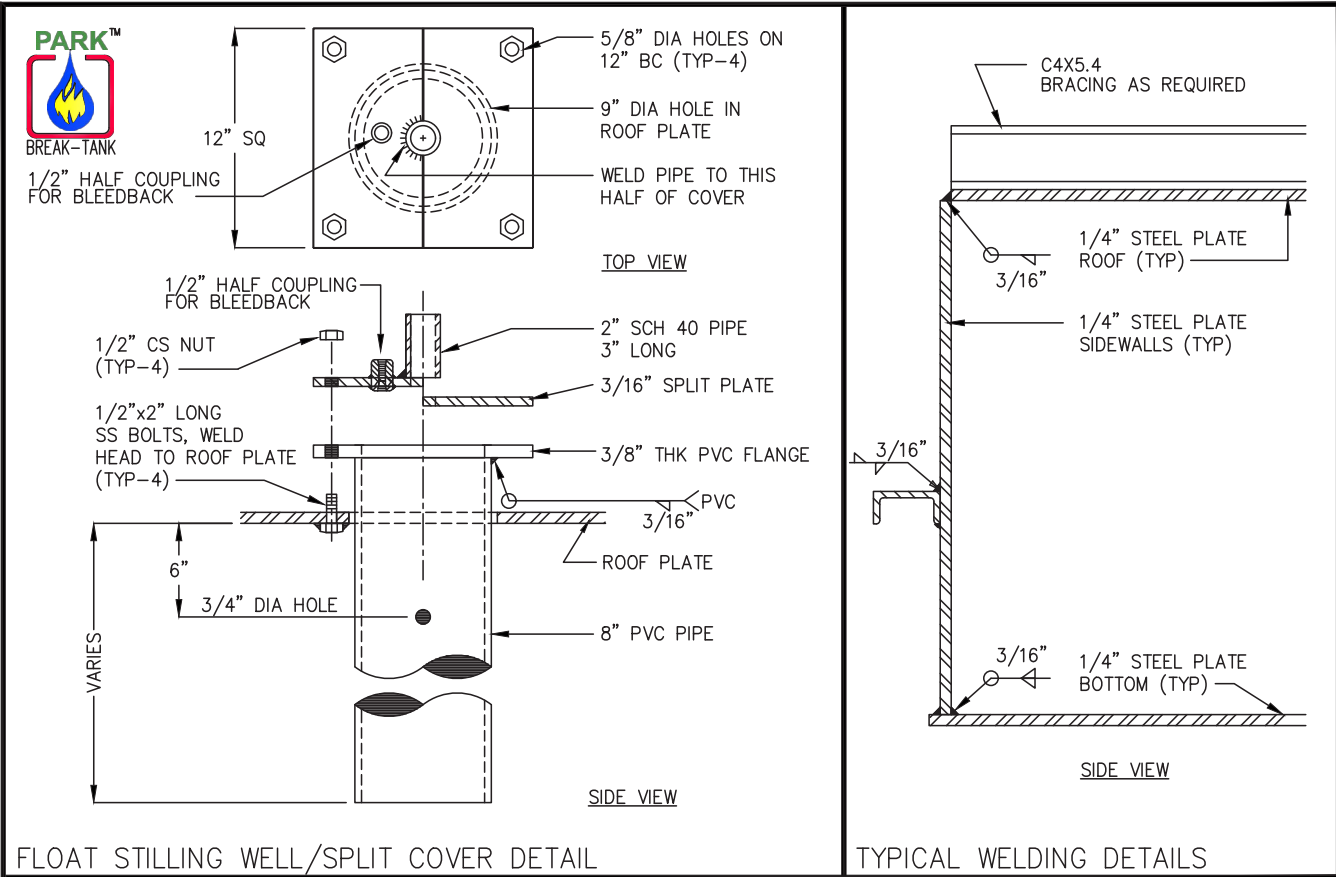


PIPING SCHEMATIC
TO BE DETERMINED BY OTHERS
PRIOR TO FABRICATION

- (1) Tank Required as Shown 10'-0" DIA X6'-0" TALL
- 2500 GALLON FIRE/1000 GALLON DOMESTIC Empty WT 7,000 lbs
- All structural steel materials shall conform to ASTM A36,
- "Specifications for Structural Steel"
- All steel pipe shall conform to ASTM A53B,
- "Specifications for Welded and Seamless Pipe"

			
DATE:	REVISION:	DATE:	REVISION:
PROJECT: FIRE/DOMESTIC WATER TANK		CUSTOMER:	
DRAWING NO. 25001000R108-STD			

Domestic & Fire Water



<p>888.611.PARK www.parkusa.com</p> <p>PARK USA DESIGN FOR WATER</p>	DATE: .	TITLE: BREAK TANK DETAILS
	REVISION: .	PROJECT: .
	REVISION DATE: .	CUSTOMER: .
	DRAWING NO. BTDETAILS-STD	



Water Storage Tanks

The ParkUSA® BreakTank® is a packaged water storage system complete with tank, controls, and fill valves. A BreakTank is a necessary component in multilevel buildings to provide adequate water needs for Fire, Domestic, & Irrigation applications.

ParkUSA® has fabricated BreakTanks for more than 35 years in accordance with the American Welding Society Specifications, AISC, NFPA, and the Uniform Building Code.

The fabrication of reliable and durable products requires knowledge, experience and investment. The Engineering team at ParkUSA designs break-tanks that are fabricated for project specifications and size requirements to meet all individual needs. Complete fabrication is performed at our Houston plant with certified material and personnel. Factory coating and abrasive blasting are performed in our new High-Tech blast/paint facility, offering excellent corrosion and abrasion resistance.

BREAK
TANK®
Water Storage Tank



Features

- Structurally & hydraulically engineered
- A36 steel construction
- Manways
- Interior & exterior ladders
- Stiling wells
- Interior ANSI/NSF protective coatings
- Exterior rust inhibitors
- 150 PSI flanges
- Anti-vortex plate
- Split float access panels
- Fill, suction, vent and drain
- Made in the USA - BreakTanks are made in America and meet the requirements of the Buy America Act



WD | BREAKTANK
Standard



Steel



Combination



Domestic



Fire

System Components

The ParkUSA BreakTank includes the following components:

- High/Low level alarm
- Alarm panel
- Pump
- Sight glass
- Ladders
- Manway

Optional features:

- Water Level Sight Gauges
- Level Probes or Floats
- UL Control Alarm/Panel
- Fill Valves
- Stainless Steel Construction

Design Considerations

The BreakTank is divided with a partition with one compartment for Fire Protection Water and the other for Potable Water (Only Where Domestic Storage is Utilized). The partition is a double wall extending to the top of the tank, each wall of the partition is sealed with a continuous weld between the wall and four sides of the tank. There is an air space between the walls of the partition of not less than four inches for tanks with a height of ten feet or less. For tanks over ten feet in height, the space between the walls of the partition is not less than six inches. A nonthreaded opening is provided at the bottom of the partition to give visual evidence of loss of integrity of the wall of the partition. The air space between the partition walls is given a one psi air test with all welds soaped to assure no leaks in the partition chamber. ParkUSA furnishes a notarized certificate of compliance with this test. A metal nameplate indicating the name of manufacturer, date of manufacture and serial number of the tank is permanently affixed to the tank. The tanks are constructed entirely of new materials to assure against the possibility of contamination from previous usage.

Visit breaktank.parkusa.com for more information and design assistance.

To request a quote or catalog, visit request.parkusa.com.



APPLICATIONS



Good to use in BMPs



Municipal



Commercial



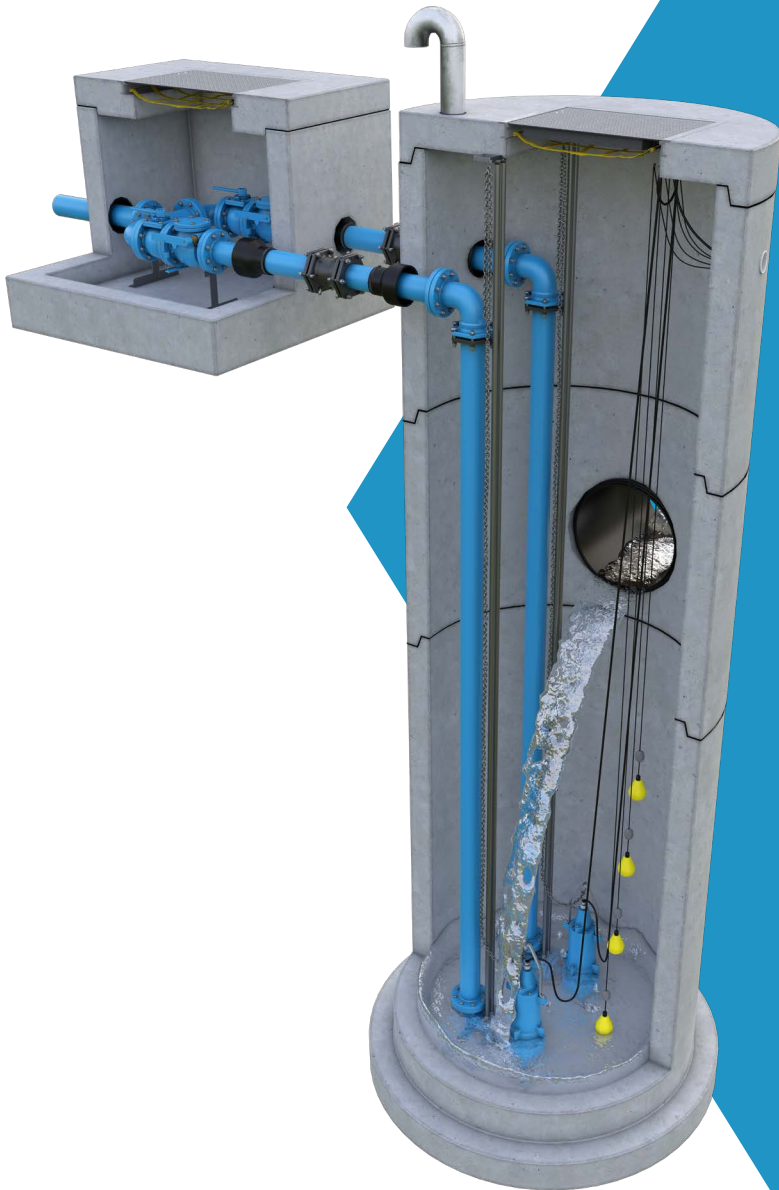
Industrial



Medical Facilities

Pump Trooper[®]

Lift Stations




PARK
USA
A Northwest Pipe Company

ENGINEERING FACTS

GENERAL INFORMATION

ParkUSA's PumpTrooper®, a submersible pump lift station, is a reliable and cost-effective solution to prevent flooding by receiving and moving stormwater and/or sanitary wastewater to designated locations. Generally, a lift station is used to temporarily transfer liquid that cannot flow by gravity on its own. This centrifugal pump system is powered by a close-coupled electric motor. The pumps operate quietly and are cooled by the moving liquid to maximize their lifespan.

Most pump stations are designed for duplex, triplex, or quadruplex pump installations. Although PumpTroopers can contain any number of pumps and pump sizes, the most common pump-motor unit is the duplex system. In this system, two pumps alternate in operation to equalize the wear of the pumps and to prevent the buildup of solids in the wet well. ParkUSA's multiple pump system offers continued operation in the case of a pump failure, removal for servicing, and an extended capacity in times of extraordinary loading.

PUMPTROOPER MODELS

Effluent Pumps

Effluent pumps are used to move small quantities of stormwater or subsurface water at low to moderate flow rates. The ParkUSA line of Effluent Pump Station is ideal for effluent applications where a gravity flow system is not practical. The effluent pump package is available in a Simplex (single pump) or Duplex (dual pump). The discharge size is typically 1 ¼ inch to 2 inches with flow rates up to 30 gpm and horsepower ranging from fractional to two HP.

Features:

- ½ HP through three HP effluent pumps
- Offered as complete turnkey systems or engineered to project specifications
- Computer system design and selection programs available for design assistance
- Variable Wet Well Sizes
- Grating or Hatchway Access
- Automatic or Manual Operation

Grinder Pumps

A grinder pump is a high-powered pump fitted with sharp cutters to shred solids and move them under high pressure usually in a relatively small diameter pipe. Grinder pumps are most commonly used for lower flows and high pressure or higher head applications. A common application where a grinder pump is used is when pumping into a pressure sewer system.

Grinder Pumps are designed to disintegrate or grind the solids in wastewater thus reducing discharge pipe size and creating a pressurized system. Grinder pumps are used on small to medium sized commercial applications. The discharge pipe size is 2 inches and 3 inches, with flow rates up to 100 gpm and horsepower ranging from 2 to 7 ½ HP. The ParkUSA line of Grinder Pump Stations is ideal for sewer applications where a gravity flow system is not practical. The grinder pump package is available in a Simplex (single pump) or Duplex (dual pump).

Features:

- A market leader in packaged grinder pump systems
- Two HP through 15 HP grinder pumps with lifts to 260 feet and flows to 190 GPM
- Offered as complete turnkey systems or engineered to project specifications
- Computer system design and selection programs available for design assistance
- Explosion-proof construction available

Non-Clog Pumps

Submersible Non-Clog pumps are fitted with a specially designed Non-Clog impeller specifically suited for stormwater, raw and treated sewage, industrial wastes, contaminated liquids, storm and mine water, drainage, liquids containing solids in suspension, stringy material, slurries, etc.

FEATURES

- Precast Concrete or Fiberglass Models Available
- Various Pump Types Available
- Pedestrian or Traffic Rated
- Remote Maintenance Alarm Available
- Interior Liners Available
- Meets all Building Codes

ParkUSA's PumpTrooper®, a submersible pump lift station, is a reliable and cost-effective solution to prevent flooding by receiving and moving stormwater and/or sanitary wastewater to designated locations.

The Park Non-Clog Pump Station is an excellent choice for stormwater sewer applications where a gravity flow system is not practical. The non-clog pump package is available in a Simplex (single pump), Duplex (dual pump), Triplex (three pumps), and other multiple configurations.

Features:

- A market leader in packaged non-clog pump systems
- One HP through 100 HP non-clog pumps
- Offered as complete turnkey systems or engineered to project specifications
- Computer system design and selection programs available for design assistance
- Explosion-proof construction available

Axial Flow Pumps

Submersible Axial flow pump lift stations are ideal for stormwater applications where the pump performance require high-flow and low-head. This situation occurs many times where a stormwater detention pond is located. The pond depth is too deep for the gravity flow drainage. The pump station will lift the water to enable gravity-flow drainage.

The Park Axial Flow Pump Station is an excellent choice for stormwater sewer applications where a gravity flow system is not practical. The axial flow pump package is generally installed in a Duplex (dual pump) arrangement, but can be designed for multiple pump configurations.

Features:

- A market leader in packaged non-clog pump systems
- 600 through 5000 GPM flow rates
- Offered as complete turnkey systems or engineered to project specifications
- Computer system design and selection programs available for design assistance
- Explosion-proof construction available

Vertical Turbine Flow Pumps

Vertical turbine flow pump lift stations are ideal for stormwater applications where the pump performance requires high-flow as well as moderate to high-head. This situation occurs when stormwater is being sent through a force main a large distance away, or if the stormwater is being used in a pressurized irrigation system.

The Park Vertical Turbine Pump Station is an excellent choice for stormwater sewer applications where a gravity flow system is not practical. The vertical turbine pump consists of a submersible pump and discharge column, and a TEFC dry motor. The pump package is generally installed in a Duplex (dual pump) arrangement, but can be designed for multiple pump configurations.

Features:

- A market leader in packaged vertical pump systems.
- 600 through 5000 GPM flow rates
- Offered as complete turnkey systems or engineered to project specifications.
- Computer system design and selection programs available for design assistance.
- Explosion-proof construction available.

SYSTEM COMPONENTS

The ParkUSA PumpTrooper includes the following components:

Pump-Motor Unit(s): Described above, under pump models.

Wet Well Basin with Access Cover: The wet well structure for a submersible pump system is generally located below grade. Precast concrete construction is recommended for buried wet wells that require strength and corrosion resistance. Fiberglass wet wells are suggested for above ground applications, basements, or parking garages.

Wet wells range from four feet to 12 feet in diameter, with depths up to 30 feet. An access hatchway is located at the top of the wet well to permit visual examination of the wet well interior, and for the removal or installation of the pumps. The hatchway is manufactured from coated steel or aluminum, and a locking arm allows the hatchway to be locked in an open position during service. Materials for the hatchway should be specified as rated for either pedestrian or traffic duty for safety and security purposes.

Pump Removal Apparatus (Guide Rail System): The guide rail system is unique to the submersible pump system. It allows for pump removal, inspection, servicing, and reinsertion of the pump with no need for service personnel to enter the wet well. The rail system consists of stainless steel vertical pipe rails, which extend from the base plate of the wet well to the access cover. During insertion of the pump, the pump is lowered down the rails and fitted to the discharge pipe with a quick-disconnect sealing flange. A chain or cable is attached to each pump and extends up to the access cover. The pumps can be lifted by a portable or permanent hoist for non-confined space removal and replacement.

Control Panels with Level Control Equipment:

The PumpTrooper relies on an electrical control system to monitor the liquid level to operate the pumps. The controls include a control panel mounted above ground plus multiple float switches located in the wet well. The control panel should be weatherproof for outdoor usage. The panel contains pump disconnects, starters with overload protection, hands-off automatic selectors, and alarm systems to indicate high liquid level conditions.

Stormwater Quality

Shut off Valves, Check Valves, and Piping:

The submersible lift station has at least one inlet pipe where wastewater enters the wet well. When the liquid level rises to a predetermined level, the pumps are activated. The liquid passes through the pump impeller and is forced through the discharge pipe and into the sewer. A check valve and a gate valve are implemented on each discharge line to prevent backflow, and to allow isolation of each pump for servicing. These valves are usually located in the wet well where the discharge piping is 2 inches or less. When the piping is 3 inches or larger, an external valve pit assembly may be required.

OPERATION

Sanitary wastewater or storm water enters the wet-well basin through the inlet pipe. An electric liquid level control system monitors the water level and engages the pump(s) at pre-determined levels. The pumps then transfer the liquid up and out of the wet-well basin into the sanitary or storm sewer system.

DESIGN CONSIDERATIONS

Depending on the project, the number of submersible pumps, as well as, the valve system are subject to change. In smaller stations, there can be one submersible pump and the valve assembly is housed within the wet well to save infrastructure cost. In larger stations, which can house multiple submersible pumps, it is recommended that the valve system be housed in a separate valve vault. This makes it easier to conduct maintenance when necessary.



SIZING

In order to size a Lift Station unit, two main factors must be considered:

Pump Selection: the operation point of the pump must be calculated, this variable is directly related to total dynamic head and volume capacity. There are several charts available to estimate this variable.

Wet Well Sizing: Once the proper pump has been selected we are able to determine what type and size of wet well is needed. There are two types of wet well that ParkUSA uses for lift stations, round and rectangular. Round wells have the benefit of reduced material costs as well as strength properties. A wet well for a submersible pump is generally located below grade. Buried wet wells require strength and corrosion resistance making precast concrete the primary choice. For wet wells above grade, steel and fiberglass are the recommended material. To summarize when determining the size of the wet well, we must find the minimum storage volume. Flow rate and retention time are basic variables to do this calculation.

MAINTENANCE

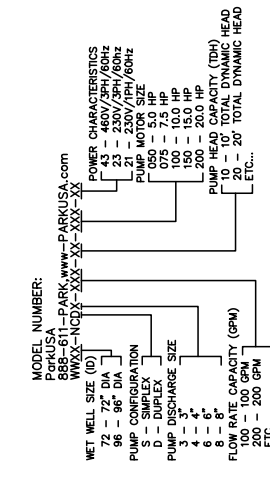
To ensure the Lift Station operates properly, routine inspections and preventive maintenance should be performed to prevent expensive repair problems, spills, etc. The common routine activities are:

- The unit should be inspected weekly, but based on model and location, inspections may be required more often.
- Records must be maintained for each routine inspection. Logs and physical records are useful in the long run.
- Wet well should be pumped out and cleaned at least twice a year.
- Inspections of pumps are required quarterly.
- Inspection of check valves are required twice a year.
- Cleaning of floats are necessary four times a year.
- Inspection of the alarm system is required weekly.
- Amp and vibration readings should be taken at least once a month.
- Annual inspection of the complete control system is required.

MARK	QTY	DESCRIPTION	KEYED NOTES
1	2	1" SUBMERSIBLE PUMP	
2	2	1" BASE ELBOWS	
3	2	1" SS STEEL CHAINS	
4	1	DUPLX CONTROL PANEL, NEMA 4X	
5	4	FLOAT SWITCH	
6	1	SS CABLE BRACKET	
7	1	1" DIA X 1/2" DEEP CONCRETE WET WELL	
8	1	1" THK FLAT CONCRETE TOP	
9	1	1" X 1/2" DOUBLE LEAF ALUMINUM HATCHWAY	
10	1	SAFETY NET	
11	1	1/2" GALVANIZED VENT	
12	2	1/2" X 1/2" DUCTILE IRON PIPE	
13	2	1" DI 90° ELBOW FL x MJ / STAR GRIPS	
14	2	SS UPPER GUIDE BRACKETS	
15	2	1" HDL BALL CHECK VALVE	
16	2	1" X 1/2" CAST IRON RING AND COVER	
17	4	SS GUIDE RAILS	
18	2	1/2" CONDUIT	
19	-	REBAR AS REQD	
20	2	1/2" LIFT-OUT ASSEMBLY	
21	1	1" X 1/2" X 1/2" DEEP PRECAST CONCRETE DISCHARGE STRUCTURE	
22	1	1" THK DISCHARGE STRUCTURE LID	
23	-	1" SLEEVE X pos. LS-XXX LINK SEAL	
24	-	ALL JOINTS MAKE WATER-TIGHT W/ PLASTIC FLEXIBLE GASKET (RAM-HEX)	
25	1	NAMEPLATE INDICATING: PUMP MODEL, SERIAL NO., 888-611-PARK, WWW.PARKUSA.COM, 888-611-PARK, 888-611-PARK, 888-611-PARK, STORM INLET PRING SEAL #/ NON-SHRINK GROUT (BY OTHERS)	
26	1	STORM INLET PRING SEAL #/ NON-SHRINK GROUT (BY OTHERS)	

STATION OPERATIONAL LEVELS		RISING LEVEL CYCLE		PUMPS IN OPERATION	
WATER LEVEL ELEVATION	XXXX	ACTION		PUMPS IN OPERATION	
LEAD PUMP "WATER" LEVEL	FE-3	LEAD PUMP "WATER" LEVEL	FE-3	LEAD PUMP "WATER" LEVEL	FE-3
LEAD PUMP "WATER" LEVEL	FE-3	LEAD PUMP "WATER" LEVEL	FE-3	LEAD PUMP "WATER" LEVEL	FE-3
FALLING LEVEL CYCLE					
WATER LEVEL ELEVATION	XXXX	ACTION		PUMPS IN OPERATION	
LEAD PUMP "WATER" LEVEL	FE-3	LEAD PUMP "WATER" LEVEL	FE-3	LEAD PUMP "WATER" LEVEL	FE-3
LEAD PUMP "WATER" LEVEL	FE-3	LEAD PUMP "WATER" LEVEL	FE-3	LEAD PUMP "WATER" LEVEL	FE-3

SYSTEM DESIGNED TO RUN ONE PUMP AT A TIME, ALTERNATING STARTS.



NOTE: WASHED SPRING TO BE FURNISHED BY CONTRACTOR

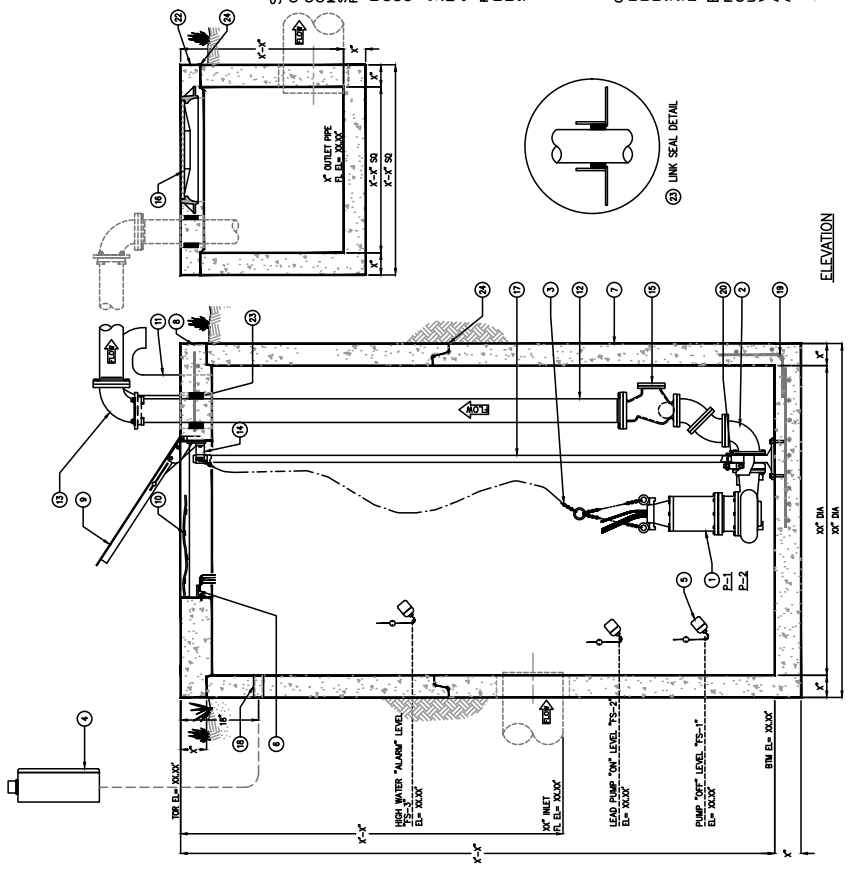
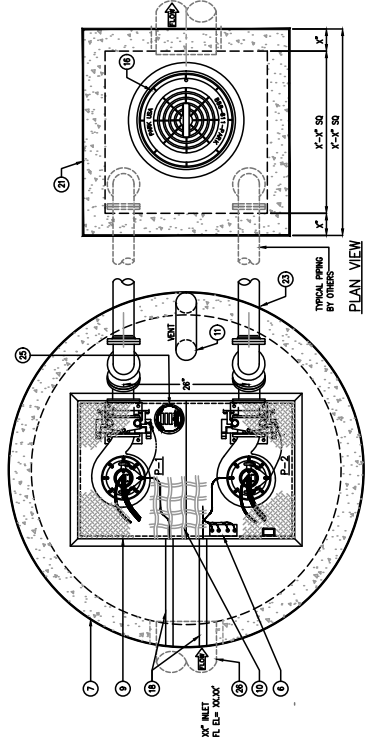
NOTE: VERIFY ALL ELEVATIONS PRIOR TO FABRICATION

NOTE: ALL INLET/OUTLET APERTURES PRIOR TO FABRICATION

DRAWING NOT FOR SUBMITTAL.
CONTACT PARKUSA FOR LIFT
STATION DESIGN ASSISTANCE.

PROJECT:
CUSTOMER:
ENGINEER:
ORDER #
DATE:
PROJ. #
LOCATION:

www.parkusa.com 888-611-PARK
STORM SEWER LIFT STATION
SUBMERSIBLE NON-CLOG PUMP STATION
PM PC DRN ENG DWG. NO. WXX-NCDX-1
DATE 05/2019 REV.



SPECIFICATIONS
CONCRETE: CLASS 1/1 CONCRETE WITH DESIGN STRENGTH 4000 PSI. ALL CONCRETE SHALL BE MONOLITHIC CONSTRUCTION AT FLOOR, FIRST STAGE OF WALL AND BAFFLE WITH SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR. ALL REBAR SHALL BE EPOXY COATED. ALL CENTERS OR EQUAL.

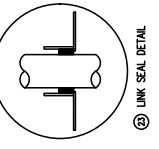
ALUMINUM HATCH: 300 PSF RATED, 1/4" ALUMINUM STD-RESISTANT FLOOR PLATE, STAINLESS STEEL TAMPERPROOF BOLTING & HINGES & SLIDLOCK. (4-20 RATING OPTIONAL).

PUMPS: PUMPS SHALL BE CENTRIFUGAL TYPE WITH INTEGRAL MOTOR. PUMPS SHALL HAVE A CAPACITY AS FOLLOWS:

PUMP NO.	TYPE	FLOW	TDH	HP	PH	IE	ELECTRICAL
P-1	IND	CLOG	XX	XXX	X	XXX	X XX
P-2	IND	CLOG	XX	XXX	X	XXX	X XX

CONTROL: PUMP CONTROLS SHALL BE MOUNTED INSIDE A UL LISTED NEMA-4X ENCLOSURE AND INCLUDE CIRCUIT BREAKERS, ALARM CIRCUIT FUSE, IEC RATED MOTOR OVERLOAD RELAY, AND A VISUAL ALARM BEACON. PANEL SHALL HAVE A VISUAL ALARM BEACON. PANEL IS DESIGNED FOR REMOTE MOUNTING.

ENGINEERING DATA: FIELD EXCAVATION AND PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF ASSEMBLY. USE DIMENSIONAL DATA AS SHOWN. ALL PIPE, FITTINGS, AND ELECTRICAL SHALL BE APPROVED BY ONE OF THE FOLLOWING ASSOCIATIONS:



Stormwater
Quality

MARK	QTY	DESCRIPTION	KEYED NOTES
1	2	1" SUBMERSIBLE PUMP	
2	2	1" BASE ELBOW	
3	2	SS STEEL CHAINS	
4	1	DUPEX CONTROL PANEL NEMA 4X SS	
5	1	LEVEL CONTROL TRANSDUCER	
6	1	SS CABLE BRACKET	
7	1	1" DIA x 1/2" DEEP CONCRETE WET WELL	
8	1	1" DIA x 1/2" DEEP CONCRETE TOP	
9	1	1" x 1/2" x 1/2" FRP GRATING AND SUPPORT	
10	1	DISCHARGE PIPE SUPPORT	
11	2	1" FLANG 90° ELBOW	
12	2	1" GALVANIZED STEEL STAND	
13	1	1" D.I. PIPE	
14	2	SS UPPER GUIDE BRACKETS	
15	2	CAST-IN DOMEL ROD INSERTS ON 1" O.C.	
16	2	1" C.I. CHECK VALVE	
17	2	1" C.I. GATE VALVE	
18	1	1" TRANSPOSER HANDLE	
19	4	SS GUIDE PAILS	
20	2	1" CONDUIT	
21	2	1" CONDUIT	
22	2	1" CONDUIT	
23	2	1" CONDUIT	
24	2	1" CONDUIT	
25	2	1" CONDUIT	
26	2	1" CONDUIT	
27	1	NAMEPLATE INDICATING: MFR, PART NO, MODEL, DATE MANUFACTURED, MFR'S LOGO	
28	1	1" CONDUIT FOR TRANSDUCER (CENTERED IN MANHOLE)	
29	1	HIGH LEVEL SHUT-OFF DITCH FLOAT (IF RECD) (INSTALLED & WIRED BY OTHERS)	
30	1	1" GALVANIZED SLEEVE	
31	1	1" UNISEAL 15-XXX x 1/2" Pcs	
32	2	1" x 1/2" M CONNECTION (BY OTHERS)	

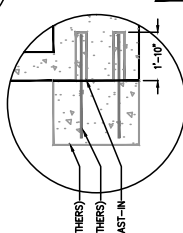
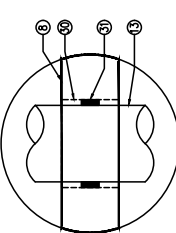
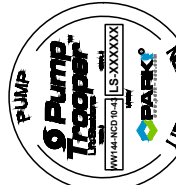
STATION OPERATION LEVELS		PUMPS IN OPERATION	
WATER LEVEL ELEVATION	ACTION	LEAD PUMP "ON"	LEAD PUMP "ON"
144.20'	LEAD PUMP "ON"	ALL PUMPS "OFF" GRADE INLET	ALL PUMPS "OFF"
154.50'	APPROACHING FULL	FALLING LEVEL CYCLE	
154.50'	LEAD PUMP TURNS "ON" GRADE INLET LEVEL READING	HIGH LEVEL ALARM "OFF"	
142.20'	PUMPS "OFF" LEVEL	ALL PUMPS "ON"	

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WVXX-NCDDX-XXX-XX-XXX-XX

NET WELL SIZE (ID)
24" - 66"
24" - 66"
24" - 66"

POWER CHARACTERISTICS
23 - 230V/3PH/60HZ
21 - 230V/3PH/60HZ
PUMP MOTOR SIZE
D - DUPLEX
S - SIMPLE
PUMP DISCHARGE SIZE
3 - 3"
4 - 4"
6 - 6"
8 - 8"
ETC...

PUMP HEAD CAPACITY (TDH)
100 - 100 GPM
200 - 200 GPM
ETC...



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CONTACT PARKUSA FOR LIFT STATION DESIGN ASSISTANCE.

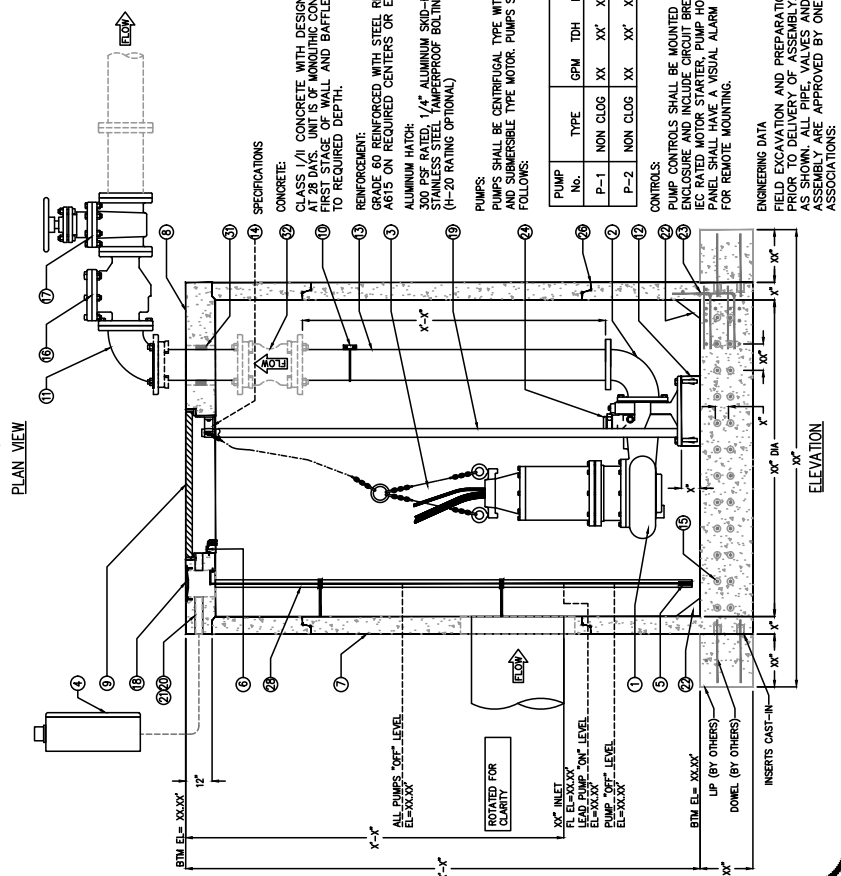
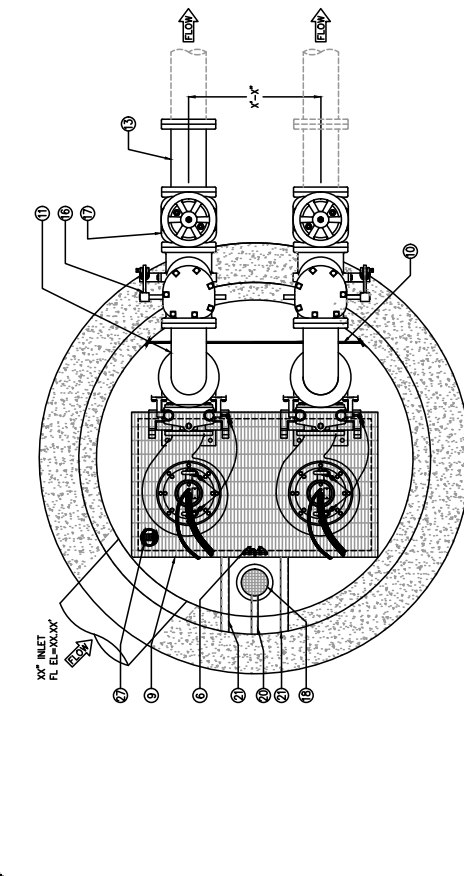
PROJECT:
CUSTOMER:
ENGINEER:
ORDER #
DATE:

PROJ. #
LOCATION:

PARK
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STORM SEWER LIFT STATION
SUBMERSIBLE NON-CLOG PUMP STATION

PM
PC
DRN ENG
DWG. NO.
DATE 05/2019
REV.
WVXX-NCDDX-2



LINKSEAL DETAIL
DOMEL ROD DETAIL

LP (BY OTHERS)
DOMEL (BY OTHERS)
INSERTS CAST-IN

CONCRETE: CLASS 1/1 CONCRETE WITH DESIGN STRENGTH OF 4500 PSI FOR 28 DAYS. UNIT IS MONOLITHIC CONSTRUCTION AT FLOOR FINISH. REINFORCEMENT AND BATTLE WITH SECTIONAL REBAR TO REQUIRED DEPTH.

REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS ON EQUAL

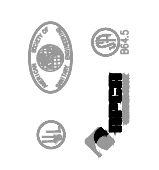
ALUMINUM HATCH: 3000 PSI MIN. STRENGTH, 1/2" ALUMINUM SHD-RESISTANT FLOOR PLATE. 3/8" DIA. STAINLESS STEEL ANCHOR BOLTS & SLAMLOCK. (11-20 RATING OPTIONAL)

PUMPS SHALL BE CENTRIFUGAL TYPE WITH INTEGRAL NON-CLOG UNIT AND SUBMERSIBLE TYPE MOTOR. PUMPS SHALL HAVE A CAPACITY AS FOLLOWS:

PUMP No.	TYPE	GPM	TDH	RPM	HP	V	PH	Hz
P-1	NON CLOG	XX	XX'	XXXX	X	XXX	X	XX
P-2	NON CLOG	XX'	XX'	XXXX	X	XXX	X	XX

CONTROLS: PUMP CONTROLS SHALL BE MOUNTED INSIDE A UL LISTED NEMA-4X ENCLOSURE AND INCLUDE CIRCUIT BREAKERS, ALARM CIRCUIT FUSE, EC RATED MOTOR STARTER, PUMP HOA, AND ALTERNATOR RELAY. PANEL SHALL HAVE A VISUAL ALARM BEACON. PANEL IS DESIGNED FOR REMOTE MOUNTING.

ENGINEERING DATA: FIELD EXCAVATION AND PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF ASSEMBLY. USE DIMENSIONAL DATA AS SHOWN. ALL PIPE, VALVES AND FITTINGS OF THE ASSEMBLY SHALL BE APPROVED BY ONE OF THE FOLLOWING ASSOCIATIONS:



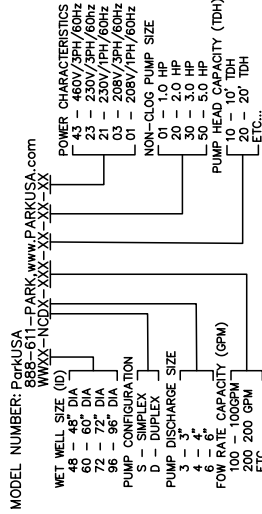
NOTE: ALL DASHED PIPING TO BE FURNISHED BY CONTRACTOR

NOTE: VERIFY ALL ELEVATIONS PRIOR TO FABRICATION

NOTE: VERIFY ALL INLET/OUTLET DIMENSIONS PRIOR TO FABRICATION

MARK	QTY	DESCRIPTION	KEYED NOTES
1	2	1" SUBMERSIBLE PUMP	
2	2	1" BASE ELBOW	
3	2	1" STAINLESS STEEL CHAINS	
4	1	DUPEX CONTROL PANEL NEMA 4X FRP (MOUNTED & WIRED BY CONTRACTOR)	
5	1	NOT USED	
6	1	1/2" SS CABLE BRACKET	
7	1	1" X 1" DIA X 1/2" DEEP CONCRETE MET WELL	
8	1	1" X 1" THK FLAT CONCRETE TOP	
9	1	1" X 1" X 1/2" SINGLE LEAF ALUMINUM HATCHWAY	
10	1	SAFETY NET	
11	1	1" GALVANIZED VENT COUPLING	
12	2	1" SCH 80 PVC DISCHARGE PIPE	
13	2	1" SCH 80 PVC 90° ELB	
14	2	1" SS UPPER GUIDE BRACKETS	
15	2	1" PVC BALL CHECK VALVE	
16	2	1" PVC BALL VALVE W/ UNIONS	
17	4	1/2" SS GUIDE RAILS	
18	4	1/2" ELECTRICAL COUPLING	
19	4	1/2" FLOAT SWITCH	
20	2	REBAR AS RECD	
21	2	LIFT-OUT ASSEMBLY	
22	2	RESILIENT RUBBER BOOT	
23	2	ALL JOINTS MADE WATER-TIGHT W/ PLASTIC FLEXIBLE GASKET (RAM-NEK)	
24	1	NAMEPLATE INDICATING: MFG: PARKUSA 888-611-PARK WWW.PARKUSA.COM MODEL: WXX-NCDX-XX-XX-XX-XX DATE MANUFACTURED	
25	1	1" X 1/2" REDUCER	
26	1	1" SCH 80 PVC DISCHARGE PIPE	
27	1	1" SCH 80 PVC TEE	

STATION OPERATION LEVELS		RISING LEVEL CYCLE		PUMPS IN OPERATION	
WATER LEVEL ELEVATION	ACTION	LEAD PUMP TURNS "ON" FS-2	LEAD PUMP "ON"	LEAD PUMP TURNS "ON" FS-2	LEAD PUMPS "ON"
XXXXX		LEAD PUMP TURNS "OFF" FS-3	LEAD PUMPS "OFF"	LEAD PUMP TURNS "OFF" FS-3	LEAD PUMPS "OFF"
XXXXX		HIGH WATER "ALARM" LEVEL FS-4	HIGH LEVEL ALARM "ON"	HIGH WATER "ALARM" LEVEL FS-4	HIGH LEVEL ALARM "ON"
XXXXX		FALLING LEVEL CYCLE		FALLING LEVEL CYCLE	
WATER LEVEL ELEVATION	ACTION	HIGH WATER ALARM FS-4	HIGH LEVEL ALARM "OFF"	HIGH WATER ALARM FS-4	ALL PUMPS "OFF" LAG PUMP SWITCHES TO LEAD PUMP
XXXXX		PUMPS "OFF" LEVEL FS-1		PUMPS "OFF" LEVEL FS-1	
XXXXX					



NAME PLATE

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CONTACT PARKUSA FOR LIFT
STATION DESIGN ASSISTANCE.**

PROJECT:
CUSTOMER:
ENGINEER:
ORDER # : PROJ # :
DATE: LOCATION:

PARK
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STORM SEWER LIFT STATION
SUBMERSIBLE NON-CLOG PUMP STATION

DATE 05/2019
REV.
DWG. NO. WXX-NCDX-3

NOTE: ALL DASHED PIPING TO BE FURNISHED BY CONTRACTOR

NOTE: VERIFY ALL ELEVATIONS PRIOR TO FABRICATION

NOTE: VERIFY ALL INLET/OUTLET ORIENTATIONS PRIOR TO FABRICATION

SPECIFICATIONS

CLASS 1/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. INCLUDING CONCRETE ABOVE FLOOR, FIRST STAIR AND SECOND FLOOR WITH SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT: REBAR TO BE COURED WITH STEEL REBAR CONFORMING TO ASTM A615 OR REQUIRED CENTERS OR EQUAL.

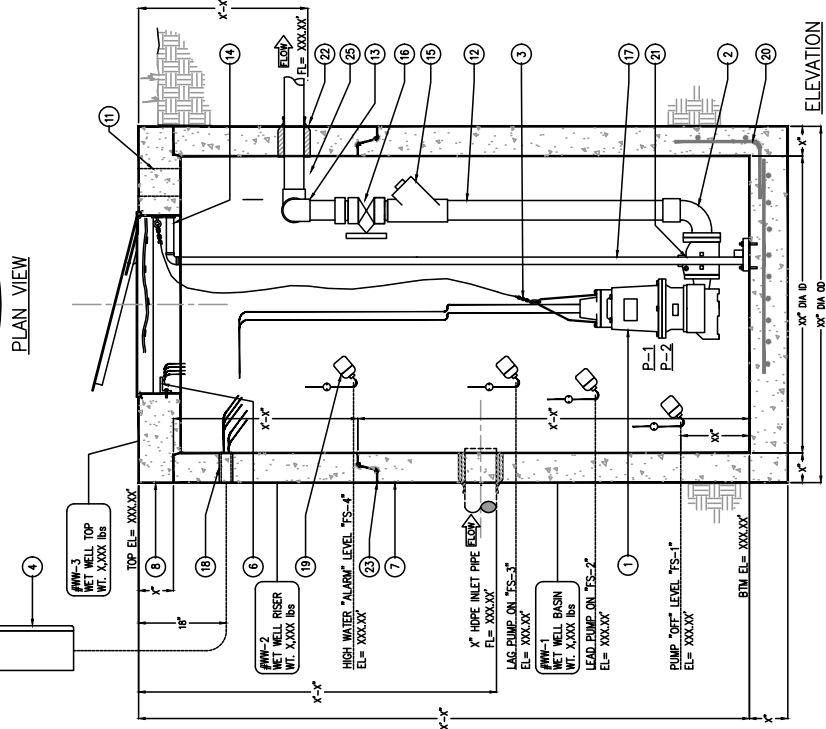
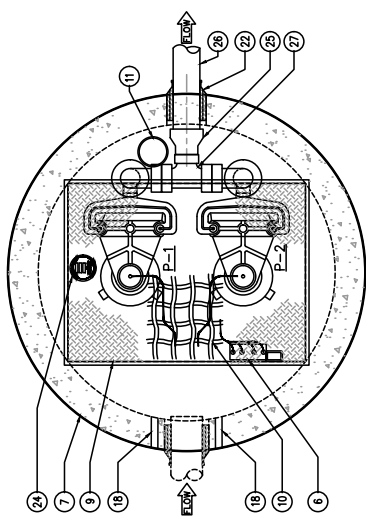
ALUMINUM HATCH: 300 PSF RATED, 1/4" ALUMINUM SKID-RESISTANT FLOOR PLATE, STAINLESS STEEL TAMPERPROOF BOLTING & HINGES & SJALOCK. (H-20 RATING OPTIONAL)

PUMPS: PUMPS SHALL BE CENTRIFUGAL TYPE WITH INTEGRAL NON-CLOG UNIT AND SUBMERSIBLE TYPE MOTOR. PUMPS SHALL HAVE A CAPACITY AS FOLLOWS:

PUMP	No.	TYPE	GPM	TDH	RPM	HP	V	PH	ELECTRICAL
P-1	NON CLOG	XX	XX	XXXX	X	XXX	X	XX	XX
P-2	NON CLOG	XX	XX	XXXX	X	XXX	X	XX	XX

CONTROLS: PUMP CONTROLS SHALL BE MOUNTED INSIDE A UL LISTED NEMA-4X ENCLOSURE AND INCLUDE CIRCUIT BREAKERS, ALARM CIRCUIT FUSE, IEC RATED MOTOR STARTER, PUMP HOA, AND ALTERNATOR RELAY. PANEL DESIGNED FOR REMOTE MOUNTING.

ENGINEERING DATA: FIELD EXCAVATION AND PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF ASSEMBLY. VERIFY ALL ELEVATIONS AND ORIENTATIONS PRIOR TO FABRICATION. APPROVED BY ONE OF THE FOLLOWING ASSOCIATIONS:



Stormwater
Quality

MARK	QTY	DESCRIPTION
1	4	DISCHARGE ELBOW
2	4	LEFT-OUT CHAIN STAINLESS STEEL
3	2	KEYWAY
4	2	KEYWAY
5	2	SS CABLE BRACKETS
6	1	PRECAST CONCRETE WET WELL
7	2	XX-XXX SINGLE LEAF ALUMINUM HATCH W/ SS
8	2	SAFETY RAILS & SLAMLOCK
9	6	GALV VENT
10	1	DISCHARGE PIPE DUCTILE IRON
11	4	FLANG 90° ELL
12	4	UPPER GUIDE BRACKET
13	1	PAK RELEASE VALVE PIPING (BY OTHERS)
14	8	STAINLESS STEEL GUIDE RAILS
15	3	ELECTRICAL CRG (TYP 3)
16	1	ELECTRICAL CONDUIT VALVE
17	1	ELECTRICAL CONDUIT VALVE
18	-	GALVANIZED PIPE SUPPORTS (TYP)
19	1	HOLE FOR X" PIPING L5X4 X X PCS
20	4	LINSEAL (TYP)
21	3	ELECTRICAL CRG
22	1	X" PVC DRAIN (BY OTHERS)
23	1	SS PIPE SUPPORTS AS REQD
24	-	ALL JOINTS MADE WATER-TIGHT W/ PLASTIC FLEXIBLE GASKET (RAMMEX)
26	1	LIFTING DEVICES (TYP 4 FEET RISER)
27	2	PRECAST CONCRETE RISER SECTION
28	1	UPPER
29	1	UPPER
30	1	SLAMLOCK AND SAFETY NET
31	1	BLIND FLANGE
32	4	X"X" REDUCING TEE
33	4	X"X" PLUG VALVE
34	4	X" SPOOL
35	4	X" SWING CHECK
36	4	X" AIR/VACUUM RELEASE VALVE
37	4	X" JOINT OPTG
38	-	MUSK CONNECTION (BY OTHERS)
39	1	MANUFACTURING: PAKUSA, INC. 888-611-PARK WWW.PARKUSA.COM MODEL: WXX-NC0XX DATE MANUFACTURED

STATION OPERATION LEVELS	
WATER LEVEL ELEVATION	ACTION
XX-XX	LEAD PUMP TURNS "ON" (LOW SPEED)
XX-XX	LEAD PUMP TURNS "ON"
XX-XX	LAG PUMP 1 TURNS "ON"
XX-XX	LAG & LAG 1-2 PUMPS "ON"
XX-XX	LAG PUMP 2 TURNS "ON"
XX-XX	LAG & LAG 1-2 PUMPS "ON"
XX-XX	HIGH WATER "ALARM" LEVEL
XX-XX	HIGH LEVEL "ALARM" "ON"

PUMPS IN OPERATION	
WATER LEVEL ELEVATION	ACTION
XX-XX	ALL PUMPS "OFF" LAS PUMP SWITCHES TO LEAD PUMP

MODEL NUMBER: PAKUSA 888-611-PARK WWW.PARKUSA.COM WXX-NC0XX-XXX-XX-XX-XX-XX

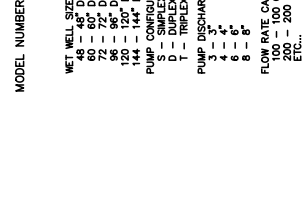
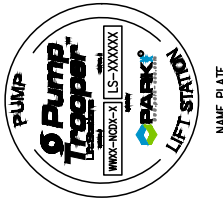
NET WELL SIZE (ID)
 48 - 48" DIA
 60 - 60" DIA
 72 - 72" DIA
 96 - 96" DIA
 120 - 120" DIA
 144 - 144" DIA
 168 - 168" DIA

PUMP CONFIGURATION
 S - SIMPLEX
 D - DUPLEX
 T - TRIPLEX

PUMP DISCHARGE SIZE
 4 - 4"
 6 - 6"
 8 - 8"
 10 - 10"

FLOW RATE CAPACITY (GPM)
 100 - 100 GPM
 200 - 200 GPM
 ETC...

POWER CHARACTERISTICS
 43 - 460V/50HP/60HZ
 23 - 230V/30HP/60HZ
 L-21 - 230V/10HP/60HZ



SPECIFICATIONS

CONCRETE:
 CLASS (I) CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MANUFACTURE CONSTRUCTION AT FLOOR. FIRST STAGE OF WALL AND BAFFLE WITH SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT:
 GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

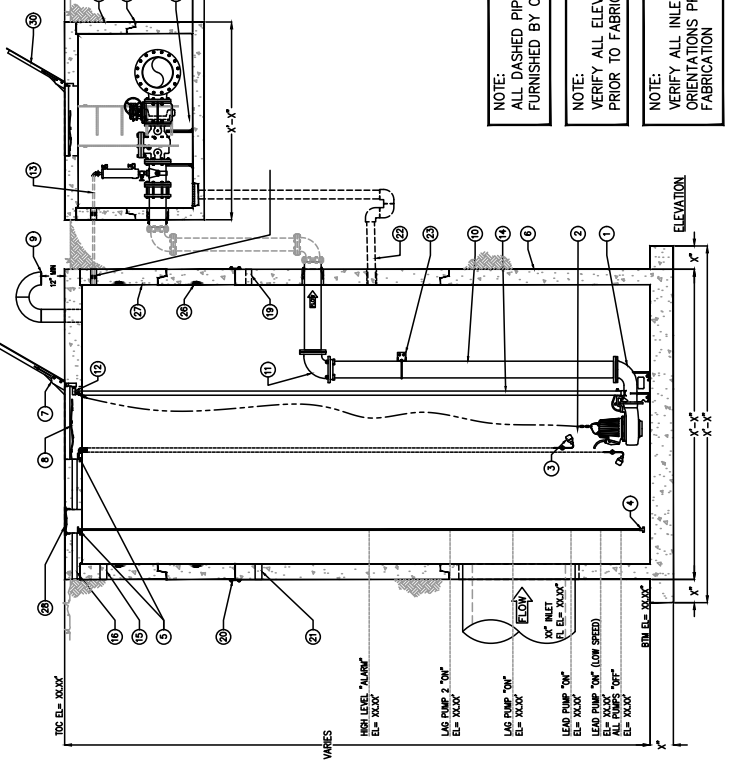
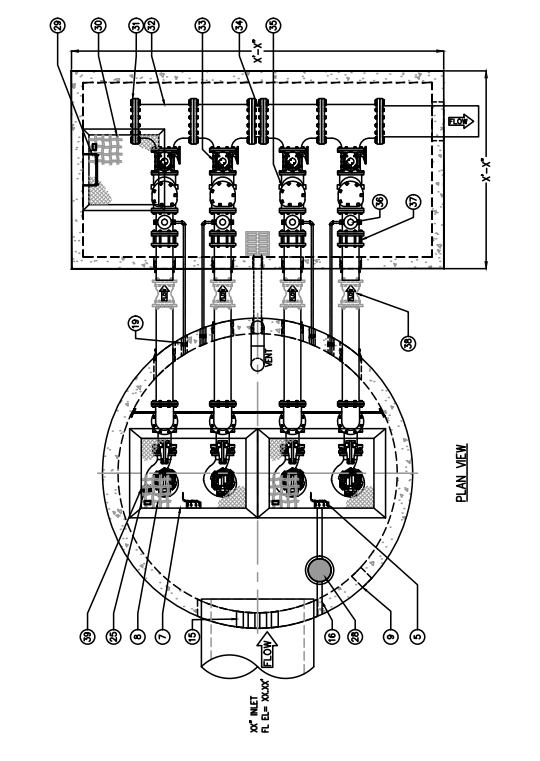
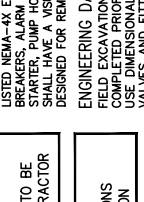
ALUMINUM HATCH:
 300 PSF RATED, 1/4" ALUMINUM SKID-RESISTANT FLOOR PLATE, STAINLESS STEEL TAMPERPROOF BOLTING & HINGES & SLAMLOCK (H-20 RATING OPTIONAL)

PUMPS:
 PUMPS SHALL BE CENTRIFUGAL TYPE WITH INTEGRAL NON-CLOG UNIT AND SUBMERSIBLE TYPE MOTOR. PUMPS SHALL HAVE A CAPACITY AS FOLLOWS:

PUMP No.	TYPE	GPM	TDR	RPM	HP	ELECTRICAL V	Hz
1	NON CLOG	XXXX XX'	XXXX	XX	XXX	X	XX
1	NON CLOG	XXXX XX'	XXXX	XX	XXX	X	XX
1	NON CLOG	XXXX XX'	XXXX	XX	XXX	X	XX
1	NON CLOG	XXXX XX'	XXXX	XX	XXX	X	XX

CONTROLS:
 PUMP CONTROLS SHALL BE MOUNTED INSIDE A UL LISTED NEMA-4X ENCLOSURE AND INCLUDE CIRCUIT BREAKERS, ALARM CIRCUIT FUSE, IEC RATED MOTOR STARTER, PUMP HOA, AND ALTERNATOR RELAY. PANEL SHALL HAVE A VISUAL ALARM BEACON. PANEL IS DESIGNED FOR REMOTE MOUNTING.

ENGINEERING DATA
 FIELD EXCAVATION AND PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF ASSEMBLY. USE DIMENSIONAL DATA AS SHOWN. ALL PIPE, VALVES AND FITTINGS OF THE ASSEMBLY ARE APPROVED BY ONE OF THE FOLLOWING ASSOCIATIONS:



DRAWING NOT FOR SUBMITTAL.
 CONTACT PARKUSA FOR LIFT STATION DESIGN ASSISTANCE.

PROJECT:
 CUSTOMER:
 ENGINEER:
 ORDER #
 DATE:

LOCATION:
 PROJ. #
 DATE:

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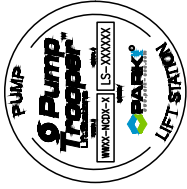
STORM SEWER LIFT STATION
 SUBMERSIBLE QUADPLEX PUMP STATION

REV. DATE 05/2019
 DWG. NO. WXX-NC0XX

MARK QTY	DESCRIPTION	MATERIAL LIST
A 3	K SUBMERSIBLE PUMP (P-1, P-2, P-3)	
B 3	SS GUIDE RAIL SYSTEM	
C 3	SS DISCHARGE ELBOW	
D 6	1" DI 90° ELB. (FLP)	
E 6	1" DI 90° ELB. (FLP)	
F 1	X" SUBMERSIBLE PUMP (DOCKEY)	
G 1	SS GUIDE RAIL SYSTEM	
H 1	X" DISCHARGE ELBOW (FLP)	
I 1	X" DI 90° ELB. (FLP)	
J 2	X" DI 90° ELB. (FLP)	
K 2	X" DI 90° ELB. (FLP)	
L 1	SS CONTROL CABLE BRACKET	
M 1	SS CONTROL CABLE BRACKET	
N 4	UPPER GUIDE BRACKET	
O 4	SS LIFTING CHAIN	
P 3	X" X" ALUMINUM HATCHWAY W/ SSMLOCKS, HINGES, AND SAFETY NET	
Q 1	X" X" GALVANIZED VEAT W/ INSECT SCREEN	
R 1	X" X" ACCESS COVER	
S 1	X" X" CAST IRON RING & COVER	
T 1	X" X" X" DIFFUSER PLATE SECURED TO BOTTOM W/ (4) X" SS ANCHOR BOLTS	
U 1	AUX LOW LEVEL FLOAT SENSOR	
V 1	X" X" MJ X MJ CONNECTION (BY OTHERS)	
W 1	NAMPLATE	
X 3	MFG: PARKUSA	
Y 1	888-611-PARK	
Z 1	WWW.PARKUSA.COM	
	MODEL: WXX-NCTXX	
	DATE MANUFACTURED	

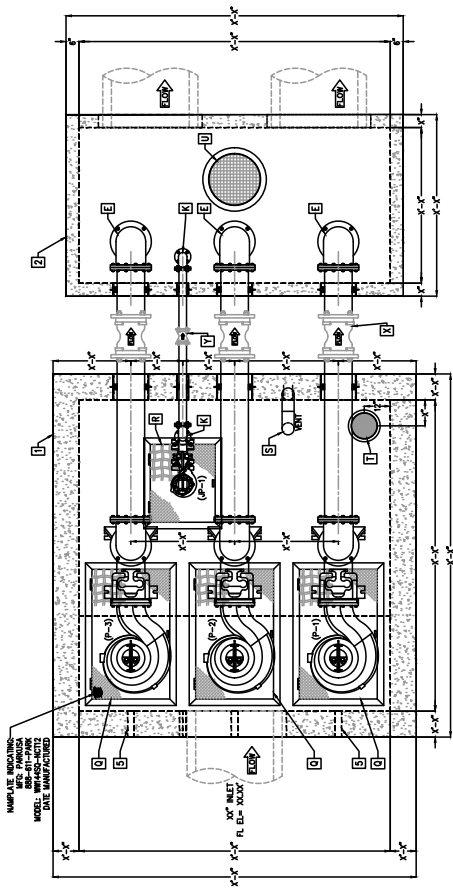
MARK	KEYED NOTES
1	PRECAST CONCRETE W/ REINFORCING
2	PRECAST CONCRETE DISCHARGE VAULT
3	TRIPLEX CONTROL PANEL
4	ELECTRICAL CABLE & CONDUIT (BY OTHERS)
5	ELECTRICAL COUPLING (TYP 4)
6	FLEXIBLE GASKET (RAM-NEK)

WATER LEVEL ELEVATION	ACTION	PUMPS IN OPERATION
XXXX	LEAD PUMP TURNS "ON"	STANDBY PUMP "ON"
XXXX	SWITCH TO GRAVITY OUTFALL	LEAD PUMP "OFF"
XXXX	HIGH WATER "ALARM" LEVEL	ALL PUMPS "OFF"
XXXX	FALLING LEVEL CYCLE	ALL PUMPS "OFF"
XXXX	WATER LEVEL ELEVATION	STANDBY PUMP TURNS "ON"
XXXX	WATER LEVEL ELEVATION	STANDBY PUMP TURNS "OFF"
XXXX	WATER LEVEL ELEVATION	STANDBY PUMP TURNS "ON"
XXXX	WATER LEVEL ELEVATION	STANDBY PUMP TURNS "OFF"
XXXX	WATER LEVEL ELEVATION	STANDBY PUMP TURNS "ON"
XXXX	WATER LEVEL ELEVATION	STANDBY PUMP TURNS "OFF"

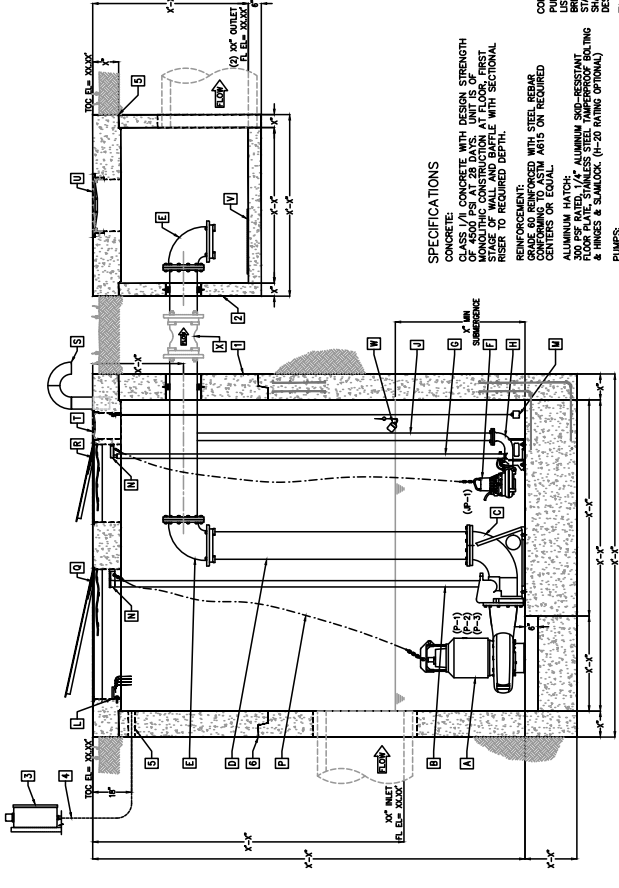


MODEL NUMBER: PARKUSA
888-611-PARK
WWW.PARKUSA.COM
WXX-NCTXX-XX-XX-XX-XX

WELL SIZE (DI)	POWER CHARACTERISTICS
60 - 60" DIA	15 - 230V/3PH/60HZ
72 - 72" DIA	21 - 230V/3PH/60HZ
84 - 84" DIA	27 - 230V/3PH/60HZ
96 - 96" DIA	33 - 230V/3PH/60HZ
108 - 108" DIA	39 - 230V/3PH/60HZ
120 - 120" DIA	45 - 230V/3PH/60HZ
132 - 132" DIA	51 - 230V/3PH/60HZ
144 - 144" DIA	57 - 230V/3PH/60HZ
156 - 156" DIA	63 - 230V/3PH/60HZ
168 - 168" DIA	69 - 230V/3PH/60HZ
180 - 180" DIA	75 - 230V/3PH/60HZ
192 - 192" DIA	81 - 230V/3PH/60HZ
204 - 204" DIA	87 - 230V/3PH/60HZ
216 - 216" DIA	93 - 230V/3PH/60HZ
228 - 228" DIA	99 - 230V/3PH/60HZ
240 - 240" DIA	105 - 230V/3PH/60HZ
252 - 252" DIA	111 - 230V/3PH/60HZ
264 - 264" DIA	117 - 230V/3PH/60HZ
276 - 276" DIA	123 - 230V/3PH/60HZ
288 - 288" DIA	129 - 230V/3PH/60HZ
300 - 300" DIA	135 - 230V/3PH/60HZ



PLAN VIEW



ELEVATION

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CONTACT PARKUSA FOR LIFT
STATION DESIGN ASSISTANCE.

PROJECT:
CUSTOMER:
ENGINEER:
ORDER #:
DATE:

PROJ #:
LOCATION:

PARK

www.parkusa.com 888-611-PARK
STORM SEWER LIFT STATION
SUBMERSIBLE TRIPLEX PUMP STATION

PM PC DRN/ENG DWG. NO. WXX-NCTXX
DATE 05/2019 REV.

SPECIFICATIONS

CONCRETE CLASS 1/4 CONCRETE WITH DESIGN STRENGTH UNLESS OTHERWISE SPECIFIED. ALL CONCRETE SHALL BE CURABLE TO FULL STRENGTH AT FIRST STAGE OF WALL AND BAFFLE WITH SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT: ALL REINFORCEMENT SHALL BE CONFORMING TO ASTM A615 OR AS REQUIRED HEREIN OR EQUAL.

ALUMINUM: ALL ALUMINUM SHALL BE 6061-T6 ALUMINUM 5052-RESISTANT FLOOR PLATE, STAINLESS STEEL W/AMPERFLOE BOLTING & HINGES & SSMLOCKS (P-50 RATING OPTIMUM).

PUMPS: ALL PUMPS SHALL BE IDENTICAL TYPE WITH MATERIAL NON-CLOG UNIT AND SUBMERSIBLE TYPE MOTOR. PUMPS SHALL HAVE A CAPACITY AS FOLLOWS:

PUMP No.	TYPE	QTY	HP	PH	IN	TH
P-1	3" DI	3	15	11	11	11
P-2	3" DI	3	15	11	11	11
P-3	3" DI	3	15	11	11	11
P-4	3" DI	3	15	11	11	11
P-5	3" DI	3	15	11	11	11
P-6	3" DI	3	15	11	11	11
P-7	3" DI	3	15	11	11	11
P-8	3" DI	3	15	11	11	11
P-9	3" DI	3	15	11	11	11

CONTROLS: PUMP CONTROLS SHALL BE MOUNTED INSIDE A UL LISTED CONTROL PANEL WITH CIRCUIT BREAKERS, ALARM CIRCUIT FUSE, EC RATED MOTOR STARTER, PUMP HOLD, AND ALTERNATOR RELAY. PANEL SHALL BE MOUNTED TO THE EXTERIOR OF THE LIFT STATION. PANEL IS DESIGNED FOR REMOTE MOUNTING.

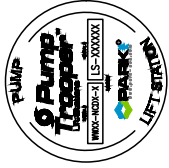
ENGINEERING DATA: FIELD EXCAVATION AND PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF ASSEMBLY. ALL VALVES AND FITTINGS OF THE ASSEMBLY ARE APPROVED BY ONE OF THE FOLLOWING ASSOCIATIONS:



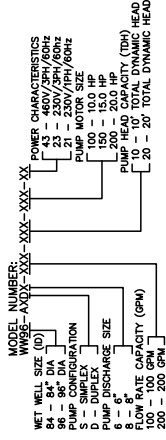
Stormwater Quality

MARK QTY DESCRIPTION	KEYED NOTES
1	1" VITON O-RING
2	1" VITON O-RING
3	1" VITON O-RING
4	1" VITON O-RING
5	1" VITON O-RING
6	1" VITON O-RING
7	1" VITON O-RING
8	1" VITON O-RING
9	1" VITON O-RING
10	1" VITON O-RING
11	1" VITON O-RING
12	1" VITON O-RING
13	1" VITON O-RING
14	1" VITON O-RING
15	1" VITON O-RING
16	1" VITON O-RING
17	1" VITON O-RING
18	1" VITON O-RING
19	1" VITON O-RING
20	1" VITON O-RING
21	1" VITON O-RING
22	1" VITON O-RING
23	1" VITON O-RING
24	1" VITON O-RING

STATION OPERATION LEVELS	RISING LEVEL CYCLE	FALLING LEVEL CYCLE	SPECIAL OPERATION
WATER LEVEL ELEVATION	PUMPS IN OPERATION	PUMPS IN OPERATION	PUMPS IN OPERATION
XX.XX'	PUMPS OFF LEVEL - NO ACTION	ALL PUMPS ARE OFF	ALL PUMPS STOPPED - STANDBY
XX.XX'	LEAD PUMP TURNS ON	LEAD PUMP TURNS OFF	PUMP SWITCHES TO LEAD PUMP
XX.XX'	LEAD PUMP TURNS OFF	LEAD PUMP TURNS ON	ALL PUMPS STOPPED
XX.XX'	ALL PUMPS TURN OFF	ALL PUMPS TURN ON	ATCH HALF FULL



NAME PLATE



DRAWING NOT FOR SUBMITTAL.
CONTACT PARKUSA FOR LIFT
STATION DESIGN ASSISTANCE.

PROJECT:

CUSTOMER:

ENGINEER:

ORDER # :

DATE:

PROJ # :

LOCATION:

PARKUSA

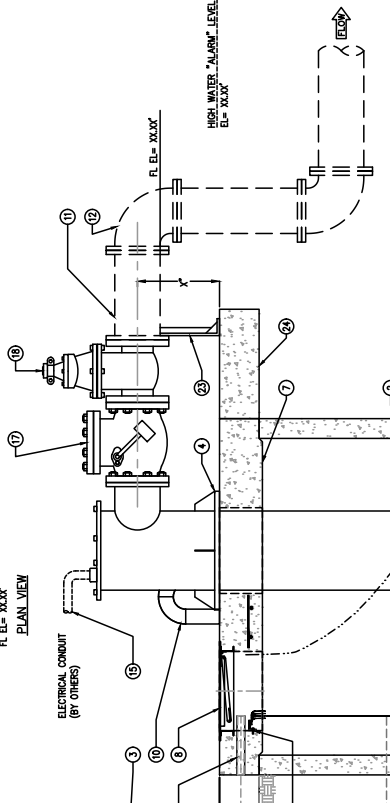
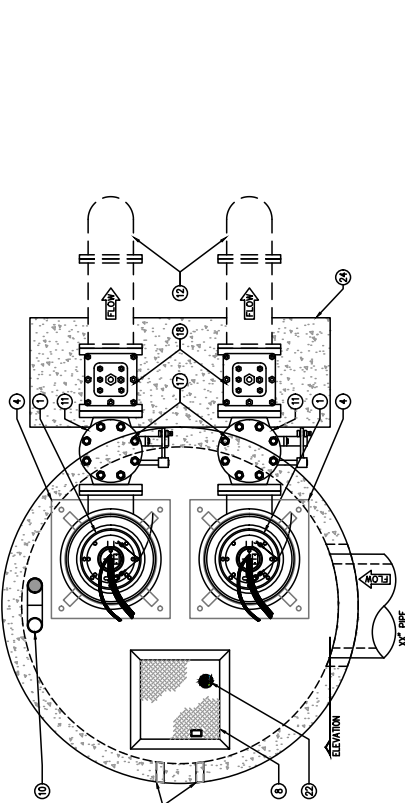
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STORM WATER LIFT STATION
DUPLEX PUMP SYSTEM

PC DRN ENG DWG. NO. WWS-AXD-2

DATE 05/2019

REV.



SPECIFICATIONS

CONCRETE: CLASS I/II CONCRETE WITH DESIGN STRENGTH OF 4000 PSI AT 28 DAYS. ALL CASTING SHALL BE DONE WITH VIBRATION AND BATTLE WITH SECTIONAL RISER TO REQUIRED DEPTH.

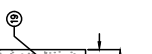
REINFORCEMENT: REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

ALUMINUM MATERIAL: 1/2" ALUMINUM SMO-RESISTANT FLOOR PLATE, STAINLESS STEEL TAMPERPROOF BOLTING & NUTS & WASHERS (H-20 RATING OPTIONAL).

PUMP No.	TYPE	GPM	TDH	RPM	HP	V	PH	Hz
1	AXIAL	10000	20'	2000	23	120X	X	23
2	AXIAL	10000	20'	2000	23	120X	X	23

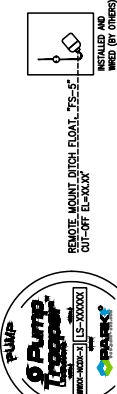
PUMP CONTROLS SHALL BE MOUNTED INSIDE A UL LISTED NEMA-4X ENCLOSURE AND INCLUDE CIRCUIT BREAKER, FUSES, AND TERMINALS. ALL PUMP STARTER, PUMP INHA, AND ALTERNATOR RELAY PANEL SHALL HAVE A VISUAL ALARM REASON. PANEL IS DESIGNED FOR REMOTE MOUNTING.

ENGINEERING DATA: REVISIONS SHALL BE COMPLETED PRIOR TO DELIVERY OF ASSEMBLY. USE DIMENSIONAL DATA AS SHOWN. ALL PIPE SHALL BE APPROVED BY ONE OF THE FOLLOWING ASSOCIATIONS:



MARK	QTY	DESCRIPTION	KEYED NOTES
1	2	X" SUBMERSIBLE AXIAL PUMP	
2	2	STAINLESS STEEL CHAINS	
3	1	DUPLICATION CONTROL PANEL NEBA (X" R/P) (MOUNTED & WIRED BY CONTRACTOR)	
4	1	ALUMINUM PEDESTAL	
5	1	1/2" DIA X 1/2" DEEP CONCRETE WET WELL	
6	1	X" FLAT CONCRETE TOP	
7	1	X" X" DOUBLE LEAF ALUMINUM HATCHWAY	
8	1	X" X" CAST IRON BALL CHECK VALVE	
9	1	X" X" CAST IRON RING & COVER	
10	1	X" GALVANIZED BOLT	
11	2	X" DISCHARGE PIPE	
12	2	X" ELL	
13	2	X" CAST IRON BALL CHECK VALVE	
14	2	X" WEEP HOLE	
15	2	X" ELECTRICAL COPULING	
16	5	X" FLAT CONCRETE TOP	
17	1	X" X" X" X" X" X" DEEP DISCHARGE STRUCTURE	
18	1	X" FLAT CONCRETE TOP	
19	1	X" CAST IRON RING & COVER	
20	-	REBAR AS NOTED	
21	2	RESISTANT RUBBER ROOT	
22	1	X" DUCKBILL VALVE (INSTALLED BY CONTRACTOR)	
23	-	ALL JOINTS MADE WATER-TIGHT W/ PLASTIC REMEABLE GASKET (RAM-NUT)	
24	1	NAME PLATE	

STATION OPERATION LEVELS		
RISING LEVEL CYCLE		
WATER LEVEL ELEVATION	ACTION	PUMPS IN OPERATION
XXXX	LEAD PUMP TURNS "ON", FS-2	LEAD PUMP "ON"
XXXX	LAG PUMP TURNS "ON", FS-3	LEAD & LAG PUMPS "ON"
XXXX	HIGH WATER "ALARM" LEVEL, FS-4	HIGH LEVEL "ALARM" "ON"
XXXX	CUT-OFF LEVEL, FS-5	ALL PUMPS "OFF"
FALLING LEVEL CYCLE		
WATER LEVEL ELEVATION	ACTION	PUMPS IN OPERATION
XXXX	CUT-OFF LEVEL, FS-5	ALL PUMPS "ON"
XXXX	HIGH WATER "ALARM", FS-4	HIGH LEVEL "ALARM" "OFF"
XXXX	PUMPS "OFF" LEVEL, FS-1	ALL PUMPS "OFF", LAG PUMP SWITCHES TO LEAD PUMP



NAME PLATE

MODEL NUMBER: WXX-AXD-XX-XX-XX-XX-XX

NET WELL SIZE (OD)

- 48 - 48" DIA
- 52 - 52" DIA
- 56 - 56" DIA
- 60 - 60" DIA
- 64 - 64" DIA
- 68 - 68" DIA
- 72 - 72" DIA
- 76 - 76" DIA
- 80 - 80" DIA
- 84 - 84" DIA
- 88 - 88" DIA
- 92 - 92" DIA
- 96 - 96" DIA
- 100 - 100" DIA

POWER CHARACTERISTICS

- 43 - 460V/50HP/60Hz
- 21 - 230V/30HP/60Hz
- 10 - 115V/15HP/60Hz

PUMP MOTOR SIZE

- 600 - 2.0 HP
- 630 - 3.0 HP
- 675 - 4.5 HP
- 735 - 7.5 HP
- 810 - 10.0 HP
- 900 - 15.0 HP
- 1000 - 20.0 HP

PUMP HEAD CAPACITY (TSD) TOTAL DYNAMIC HEAD

- 20 - 20' TOTAL DYNAMIC HEAD
- 25 - 25' TOTAL DYNAMIC HEAD
- 30 - 30' TOTAL DYNAMIC HEAD

DRAWING NOT FOR SUBMITTAL.
CONTACT PARKUSA FOR LIFT STATION DESIGN ASSISTANCE.

PROJECT:

CUSTOMER:

ENGINEER:

ORDER # : PROJ # :

DATE: LOCATION:

PARK
www.parkusa.com 888-611-PARK

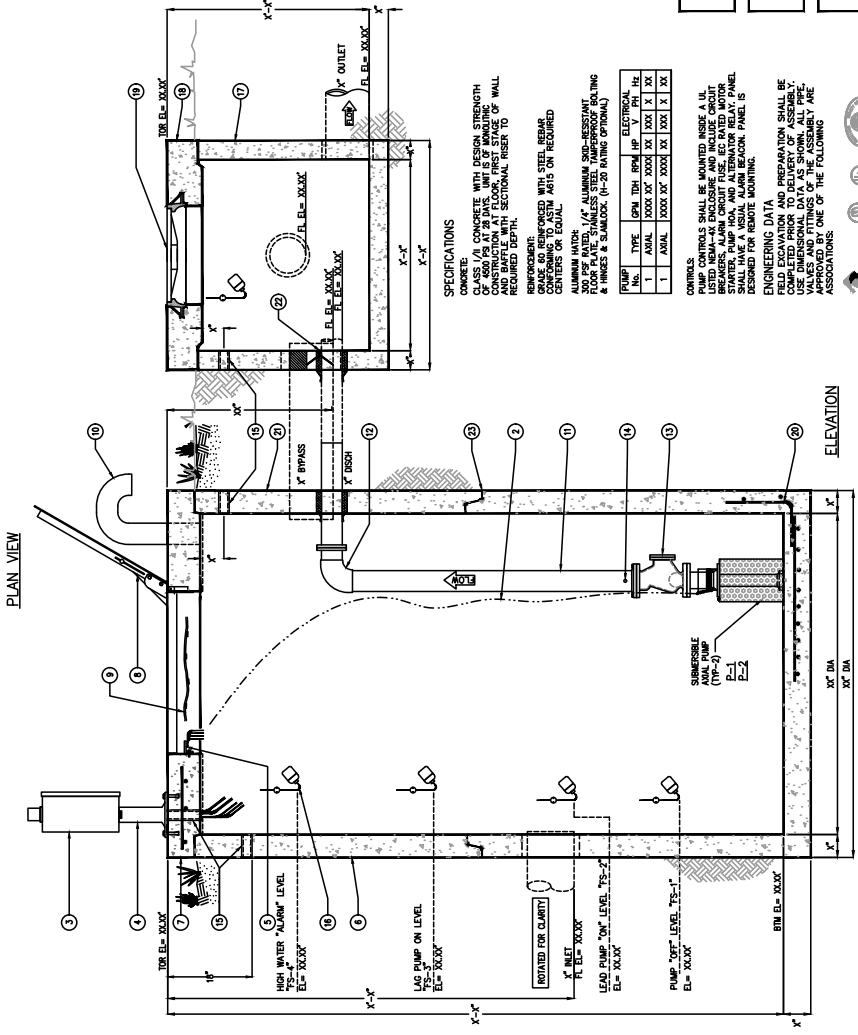
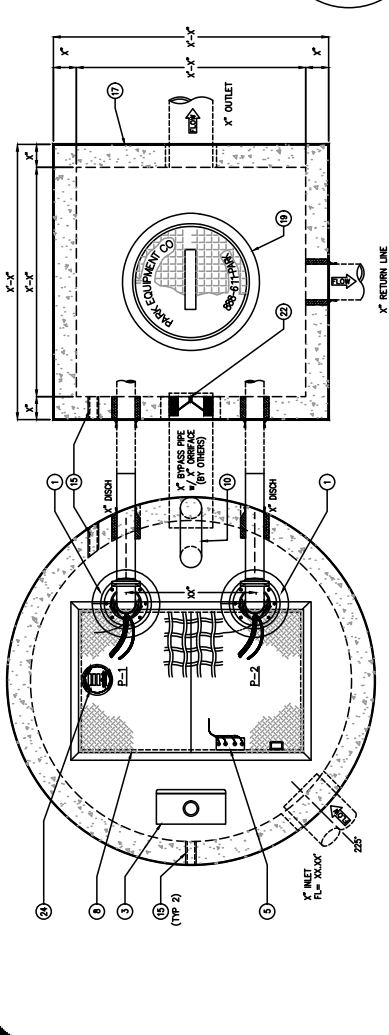
STORM SEWER LIFT STATION
SUBMERSIBLE AXIAL PUMP STATION

PC DRN ENG DWG. NO. WXX-AXD-3

DATE 05/2019

REV.

Stormwater
Quality



NOTE: ALL DASHED PIPING TO BE FURNISHED BY CONTRACTOR

NOTE: VERIFY ALL ELEVATIONS PRIOR TO FABRICATION

NOTE: VERIFY ALL INLET/OUTLET ORIENTATIONS PRIOR TO FABRICATION

MARK	QTY	DESCRIPTION	KEYED NOTES
1	1	1" SUBMERSIBLE AXIAL PUMP	
2	1	STAINLESS STEEL CHAINS	
3	1	STAINLESS CONTROL PANEL NEMA 4X FRP (MOUNTED & WIRED BY CONTRACTOR)	
4	1	NOT USED	
5	1	SS CABLE BRACKET	
6	1	1" DIA X 1/2" DEEP CONCRETE NET WELL	
7	1	1" THK FLAT CONCRETE TOP	
8	1	1" DIA X 1/2" DEEP CONCRETE NET WELL	
9	1	SAFETY NET	
10	1	1" GALVANIZED VENT	
11	1	1" SCH 80 PVC DISCHARGE PIPE	
12	1	1" PVC 90° ELL SCH80 FLAMM #/STAR GRIP	
13	1	1" SWING CHECK	
14	1	WEEP HOLE	
15	2	1" ELECTRICAL COUPLING	
16	3	FLOAT SWITCH	
17	1	NOT USED	
18	1	NOT USED	
19	1	NOT USED	
20	1	REBAR AS REQ'D	
21	1	RESILIENT RUBBER BOOT	
22	1	ALL JOINTS MADE WATER-TIGHT W/ PLASTIC FLEXIBLE GASKET (RAM-NEK)	
23	1	NAMEPLATE INDICATING: MFC: PARKUSA MFG: PARKUSA WWW.PARKUSA.COM MODEL: WXXX-AXSY-XXX-XX-XXX-XX DATE MANUFACTURED	
24	1	1" DIA X 1/2" DEEP PRECAST DISCHARGE STRUCTURE	
25	1	1" DISCHARGE STRUCTURE LID	
26	1	CAST IRON RING & COVER	

STATION OPERATION LEVELS	
WATER LEVEL ELEVATION	RISING LEVEL CYCLE
XXXX	LEAD WATER "ALARM" LEVEL, FS-2
XXXX	LEAD PUMP "ON" LEAD PUMP "ON"
XXXX	HIGH WATER "ALARM" LEVEL, FS-3
XXXX	HIGH LEVEL "ALARM" "ON"
FALLING LEVEL CYCLE	
XXXX	HIGH WATER "ALARM", FS-3
XXXX	ALL PUMPS "OFF" JAG PUMP SWITCHES TO LEAD PUMP
XXXX	PUMPS "OFF" LEVEL, FS-1



MODEL NUMBER: WXXX-AXSY-XXX-XX-XXX-XX

WET WELL SIZE (ID)
48 - 48" DIA
60 - 60" DIA
72 - 72" DIA
84 - 84" DIA
96 - 96" DIA

PUMP CONFIGURATION
D - DUPLEX
S - SINGLE

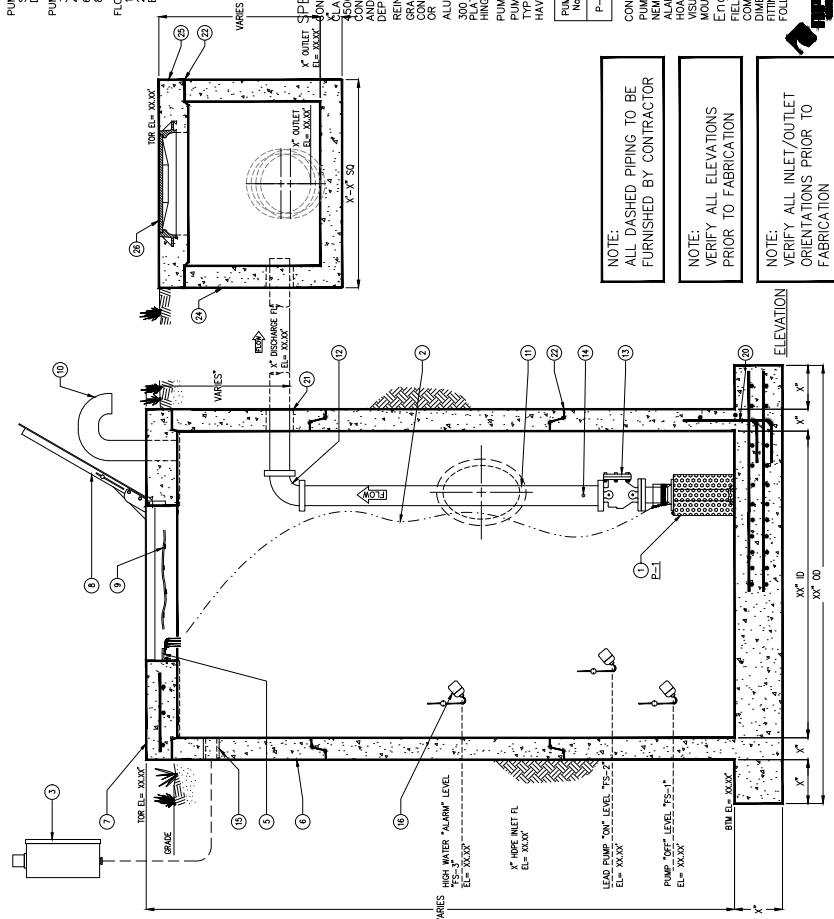
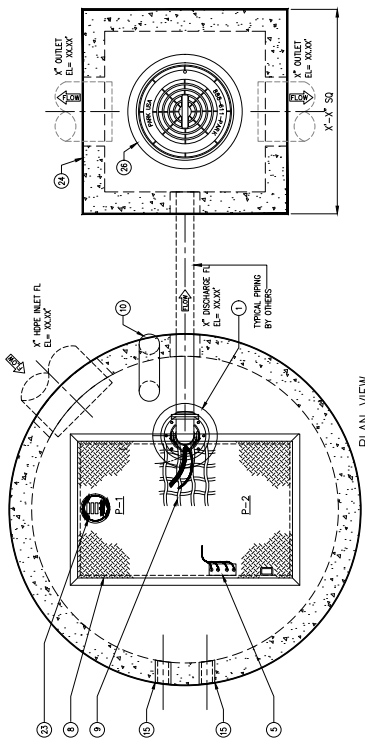
PUMP DISCHARGE SIZE
3 - 3"
4 - 4"
6 - 6"
8 - 8"

FLOW RATE CAPACITY (GPM)
100 - 100 GPM
200 - 200 GPM
ETC...

POWER CHARACTERISTICS
43 - 460V/3PH/60HZ
50 - 460V/3PH/60HZ
21 - 230V/1PH/60HZ

PUMP MOTOR SIZE
020 - 2.0 HP
030 - 3.0 HP
050 - 5.0 HP
100 - 10.0 HP
150 - 15.0 HP
200 - 20.0 HP

PUMP HEAD CAPACITY (TDH)
10 - 10' TOTAL DYNAMIC HEAD
20 - 20' TOTAL DYNAMIC HEAD
ETC...



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CONTACT PARKUSA FOR LIFT
STATION DESIGN ASSISTANCE.**

PROJECT: _____
CUSTOMER: _____
ENGINEER: _____
ORDER #: _____
DATE: _____

PROJ #: _____
LOCATION: _____

PARKUSA
www.parkusa.com 888-611-PARK

STORM SEWER LIFT STATION
SUBMERSIBLE AXIAL PUMP STATION

REV: _____
DATE 05/2019

CONCRETE:
CLASS I/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CAST. ALL REINFORCING SHALL BE PLACED TO REQUIRED DEPTH.

REINFORCEMENT:
GRADE 60 REINFORCED WITH STEEL REBAR. REBAR TO ASTM A615 IN REQUIRED CENTERS OR EQUAL.

ALUMINUM HATCH:
300 PSF RATED, 1/4" ALUMINUM SKID-RESISTANT FLOOR PLATE, STAINLESS STEEL TAMPERPROOF BOLTING & BUMLOCK.

PUMPS:
PUMPS SHALL BE CENTRIFUGAL SOLIDS HANDLING TYPE WITH SUBMERSIBLE TYPE MOTOR. PUMPS SHALL HAVE A CAPACITY AS FOLLOWS:

PUMP No.	TYPE	GPM	TDH	BRM	HP	1PH	3PH	1HZ	3HZ
P-1	AXIAL	XX	X'	XX	X	X	X	X	X


CONTROLS:
PUMPS SHALL BE MOUNTED INSIDE A JIL LISTED NEMA-4X ENCLOSURE AND INCLUDE CIRCUIT BREAKERS, ALARM CIRCUIT FUSE, EC RATED MOTOR STARTER, PUMP HOA, AND ALTERNATOR RELAY. PANEL SHALL HAVE A HOA ARM BECON. PANEL IS DESIGNED FOR REMOTE MOUNTING.

Engineering Data
FIELD EXCAVATION AND PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF ASSEMBLY. USE DIMENSIONAL DATA AS SHOWN. ALL PIPE, VALVES AND FITTINGS SHALL BE APPROVED BY ONE OF THE FOLLOWING ASSOCIATIONS:
IBR, IFC, ASME, B61.5

NOTE: ALL DASHED PIPING TO BE FURNISHED BY CONTRACTOR

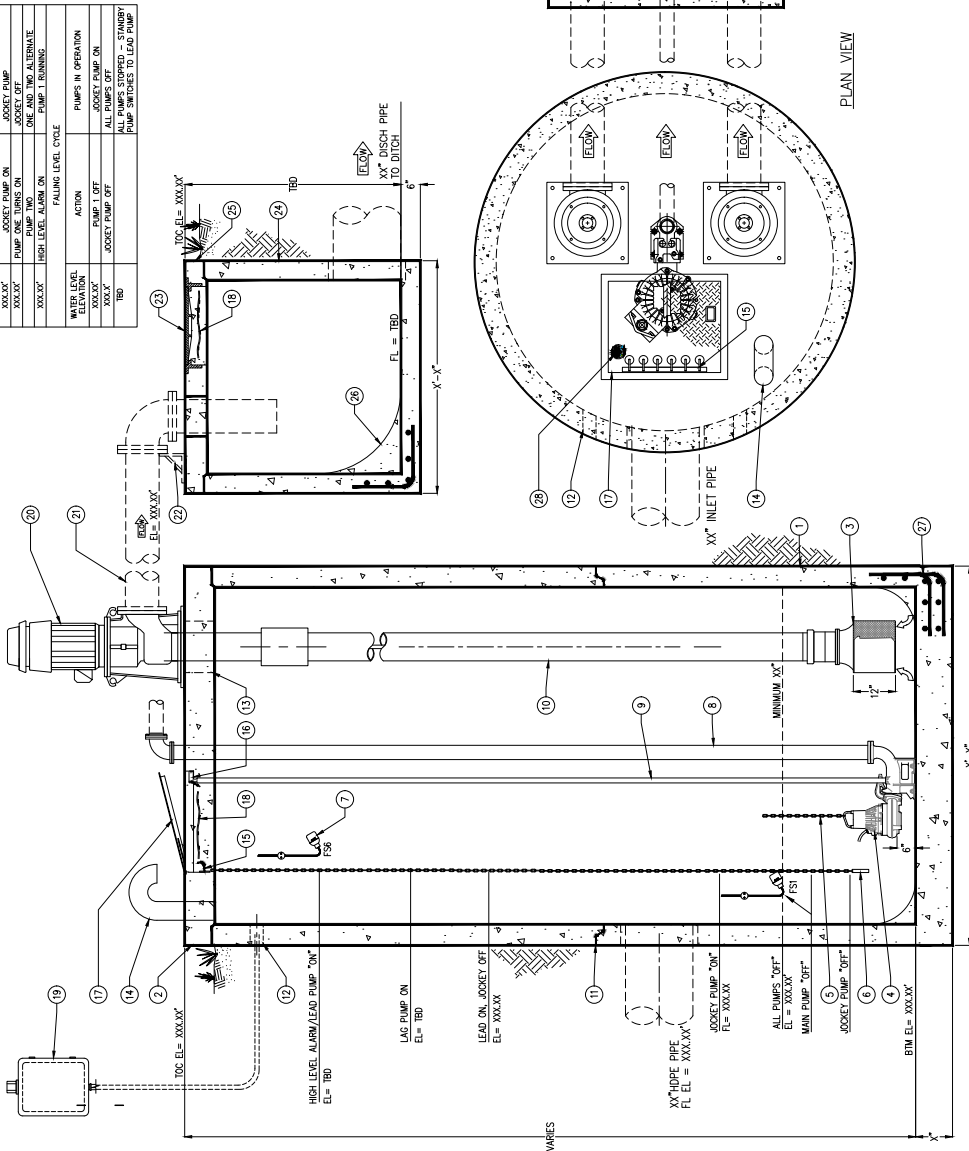
NOTE: VERIFY ALL ELEVATIONS PRIOR TO FABRICATION

NOTE: VERIFY ALL INLET/OUTLET ORIENTATIONS PRIOR TO FABRICATION

Specifications :
 Clear 4" concrete with design strength of 4000 PSI. All concrete shall be cast in place construction at floor, first stage of wall and baffle with sectional riser to required depth.
REINFORCEMENT: All reinforcement shall conform to ASTM A615 on required centers or equal.
ALUMINUM HATCH: 300 PSF rated, 1/4" aluminum skid-resistant floor with stainless steel top flanges & stanchions.
C.I. CASTINGS: Manhole rings & covers are manufactured of grey cast iron. Manhole shall have 24 inch inside diameter and be traffic duty.
PUMPS: Pumps shall be vertical turbine type with top mount motor. Pumps shall have a capacity as follows:
 PUMP No. TYPE GPM TDH RPM Hp PH Hz
 1 AXIAL XX X XX X XX X X
 2 AXIAL XX X XX X XX X X
 3 NON-CLOSED XX X XX X XX X X
CONTROLS: Pump controls shall be mounted inside a UL Listed enclosure. The enclosure shall be equipped with an alarm circuit fuse, EC rated motor starter pump, HOA, and alternator relay. Panel shall have a visual alarm beacon. Panel is designed for remote mounting.
Engineering Data
 Field excavation and preparation shall be completed prior to concrete placement. All dimensions and elevations as shown. All pipe, valves and fittings of the assembly are approved by one of the following associations:


MARK	QTY	KEYED NOTES
1	1	1" DIA. X 1'-0" DEEP PRECAST CONCRETE
2	1	1" THK FLAT CONCRETE TOP
3	1	BELL SIGNON W/ CLIP-ON SCREEN
4	1	X" SUBMERSIBLE JOCKEY PUMP
5	1	STAINLESS STEEL LIFTING CHAIN
6	1	LEVEL CONTROL TRANSDUCER
7	2	FLOAT SWITCH
8	1	1" SOH 90 PVC DISCHARGE PIPE
9	2	STAINLESS STEEL GUIDE RAILS
10	2	XX" DIA PIPE COLUMN
11	-	ALL JOINTS MADE WATER-TIGHT W/ FIBERGLASS GASKET (RHM-HEV)
12	2	XX" GALV STEEL VENT
13	2	XX" GALV STEEL VENT
14	1	SS CABLE BRACKET
15	1	UPPER GUIDE BRACKETS
16	1	XX"XX" SINGLE LEAF ALUMINUM HATCHWAY
17	1	SAFETY NET
18	2	TRIPLEX CONTROL PANEL (MOUNTED & WIRED BY CONTRACTOR)
19	1	XXHP AXIAL FLOW PUMPS
20	2	XX" DISCHARGE PIPING (BY OTHERS)
21	2	GALV STEEL PIPE SUPPORTS
22	1	XX" DIA CAST IRON RING & COVER
23	1	1" DIA. X 1'-0" DEEP DISCHARGE
24	1	1" THK FLAT CONCRETE TOP
25	1	REBAR AS REQ
26	1	NAMEPLATE INDICATING: 888-611-PARK WWW.PARKUSA.COM MODEL: WXXX-AXXX-XXXX-XXX-XX-XXX-XX DATE MANUFACTURED
27	-	
28	1	

STATION OPERATION LEVELS	
WATER LEVEL ELEVATION	PUMPS IN OPERATION
XXXXXX	JOCKEY PUMP ON
XXXXXX	JOCKEY PUMP OFF
XXXXXX	PUMP ONE TURNS ON
XXXXXX	PUMP TWO
XXXXXX	HIGH LEVEL ALARM ON
XXXXXX	PUMP T. RUNNING
PUMPING LEVEL CYCLE	
XXXXXX	PUMPS IN OPERATION
XXXXXX	JOCKEY PUMP ON
XXXXXX	JOCKEY PUMP OFF
XXXXXX	ALL PUMPS OFF
XXXXXX	FAVORS PUMP W/INTAKE TO LEAD PUMP



DRAWING NOT FOR SUBMITTAL.
 CONTACT PARKUSA FOR LIFT STATION DESIGN ASSISTANCE.

NOTE: ALL DASHED PIPING TO BE FURNISHED BY CONTRACTOR
NOTE: VERIFY ALL ELEVATIONS PRIOR TO FABRICATION
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PROJECT:	1-LXY-XXXX
CUSTOMER:	
ENGINEER:	
ORDER #:	PROJ #:
DATE:	LOCATION:
PARK	
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STORM SEWER LIFT STATION	
SUBMERSIBLE AXIAL PUMP STATION	
PM	DRN/ENG DWG. NO.
DATE	REV.
05/2019	WWXX-AXT-1

Stormwater Quality

MARK	QTY	KEYED NOTES	DESCRIPTION
1	2		SUBMERSIBLE PUMP FL16VT
2	1		4"X3127 (TP-2)
3	1		4"X STEEL PUMP TUBE
4	1		ASSEMBLY
5	1		ANTI-VORTEX PLATE
6	1		PRECAST CONCRETE LIFT CHAIN
7	1		STATION, PARK MODEL WH1050
8	1		WET WELL GALV FRAME & GRATE
9	1		PUMP GALV FRAME & GRATE
10	1		SS GUIDE RAILS
11	1		STEEL REINFORCEMENT AS REQD
12	1		WALL SUPPORT
13	1		GALV BOLTS & PLATES
14	1		SCOTED OPENING
15	1		DISCHARGE PIPE
16	1		PRESSURE RELIEF VALVE
17	1		DISCHARGE VAULT GALV FRAME & GRATE
18	1		ALL JOINTS MADE WATER-TIGHT (RAMMEK)
19	1		W/ PLASTIC FLEXIBLE GASKET (RAMMEK)
20	1		NAMEPLATE INDICATING: MFR: PARKUSA 888-611-PARK 888-611-PARK PARKUSA MODEL: WMX-AXT-2 DATE MANUFACTURED



NAME PLATE

SPECIFICATIONS

CONCRETE: CLASS 1/1 CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR, FIRST STAGE OF WALL REINFORCEMENT AT SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT: PRECAST CONCRETE WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

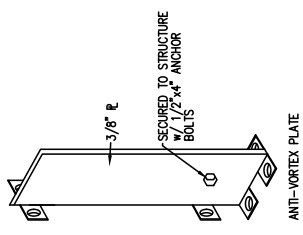
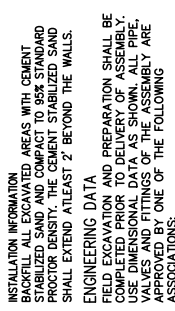
ALUMINUM HATCH: 300 PSF RATED, 1/4" ALUMINUM SKID-RESISTANT FLOOR PLATE, STAINLESS STEEL TAMPERPROOF BOLTING & HINGES & SLAMLOCK. (H-20 RATING OPTIONAL)

PUMP	NO.	TYPE	HP	TDH	RPM	HP	V	PH	Hz
1	1	AXIAL	XXXX	XX	XXXX	XX	XXX	X	XX
1	1	AXIAL	XXXX	XX	XXXX	XX	XXX	X	XX
1	1	NON-CLOG	XXXX	XX	XXXX	XX	XXX	X	XX

CONTROLS: PUMP CONTROLS SHALL BE MOUNTED INSIDE A UL LISTED NEMA-4X ENCLOSURE AND INCLUDE CIRCUIT BREAKERS, ALARM CIRCUIT FUSE, IEC RATED MOTOR STARTER, PUMP HOA, AND ALTERNATOR RELAY. PANEL SHALL HAVE A VISUAL ALARM BEACON. PANEL IS DESIGNED FOR REMOTE MOUNTING.

INSTALLATION INFORMATION: BACKFILL ALL EXCAVATED AREAS WITH CEMENT STABILIZED SAND AND COMPACT TO 95% STANDARD PROCTOR DENSITY. THE CEMENT STABILIZED SAND SHALL EXTEND ATLEAST 2' BEYOND THE WALLS.

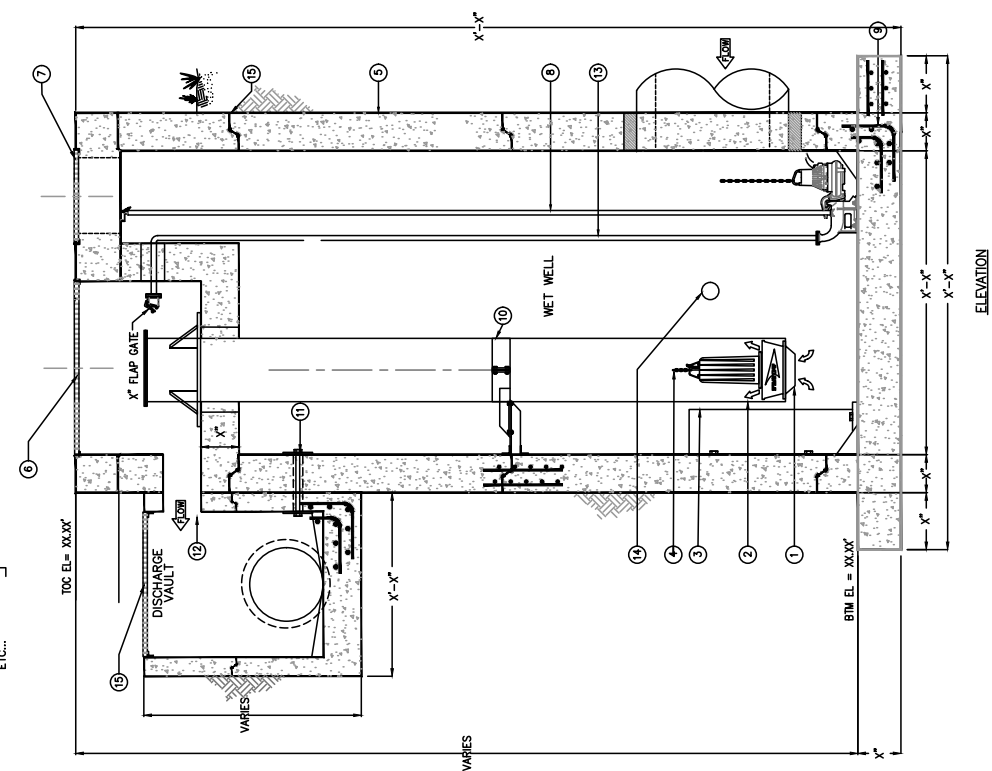
ENGINEERING DATA: FIELD EXCAVATION AND PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF ASSEMBLY. USE DIMENSIONAL DATA AS SHOWN. ALL PIPE, FITTINGS AND FITTINGS OF THE ASSEMBLY ARE APPROVED AS ONE OF THE FOLLOWING ASSOCIATIONS:



NOTE: ALL DASHED PIPING TO BE FURNISHED BY CONTRACTOR

NOTE: VERIFY ALL ELEVATIONS PRIOR TO FABRICATION

- MODEL NUMBER: ParkUSA 888-611-PARK www.PARKUSA.com
WXXX-NCOX-XXX-XX-XX-XX
- WET WELL SIZE (ID)
48 - 85" DIA
72 - 72" DIA
96 - 85" DIA
120 - 120" DIA
- PUMP CHARACTERISTICS
43 - 460V/3PH/60Hz
21 - 230V/1PH/60Hz
- PUMP MOTOR SIZE
030 - 3.0 HP
050 - 5.0 HP
075 - 7.5 HP
150 - 15.0 HP
200 - 20.0 HP
- PUMP HEAD CAPACITY (TDH)
10 - 10' TOTAL DYNAMIC HEAD
10 - 20' TOTAL DYNAMIC HEAD
ETC...
- PUMP CONFIGURATION
S - SIMPLEX
D - DUPLEX
T - TRIPLEX
- PUMP DISCHARGE SIZE
3 - 3"
4 - 4"
6 - 6"
8 - 8"
- FLOW RATE CAPACITY (GPM)
100 - 100 GPM
200 - 200 GPM
ETC...



**DRAWING NOT FOR SUBMITTAL.
CONTACT PARKUSA FOR LIFT
STATION DESIGN ASSISTANCE.**

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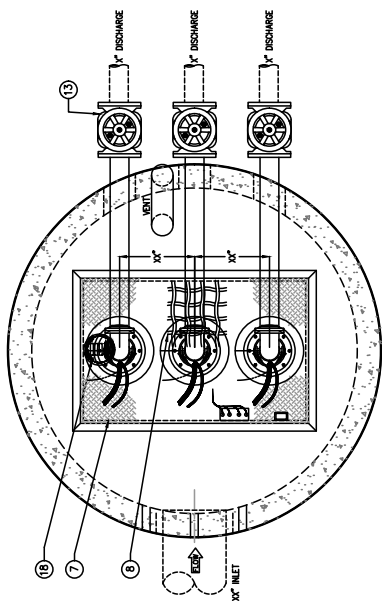
PROJECT:
CUSTOMER:
ENGINEER:
ORDER # PROJ #
DATE: LOCATION:

PARK
www.parkusa.com 888-611-PARK

STORM WATER LIFT STATION
DUPLEX PUMP SYSTEM

PM DRN ENG DWG. NO.
DATE 05/2019 WXXX-AXT-2 REV.

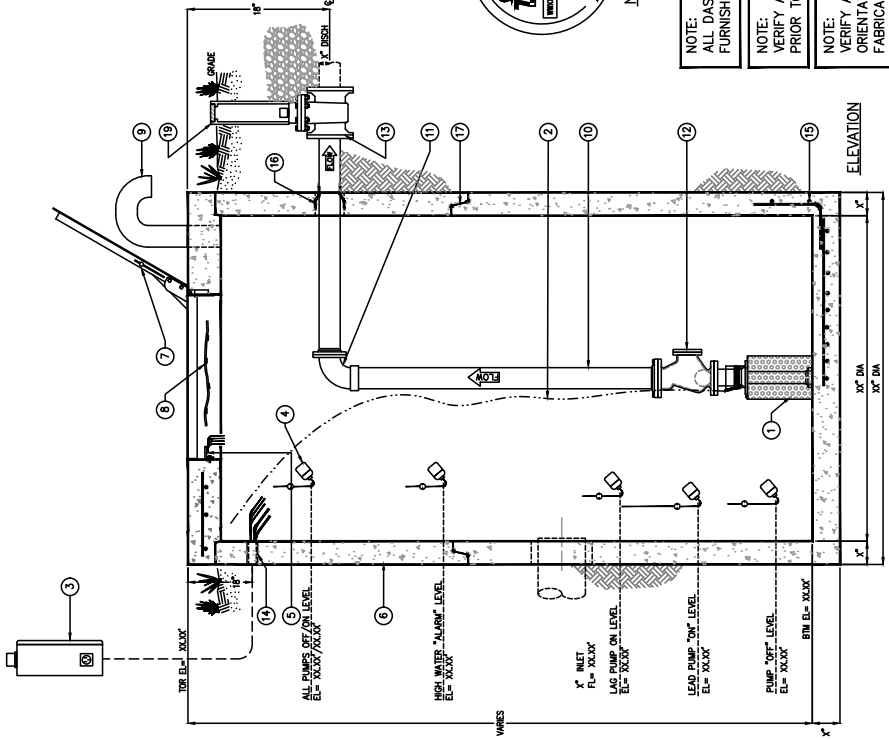
MARK	QTY	DESCRIPTION
1	3	SUBMERSIBLE AXIAL PUMP
2	3	LIFT-OUT CHAIN STAINLESS
3	1	NEMA 4X CONTROL PANEL W/ GENERATOR RECEPTACLE (MOUNTED BY CONTRACTOR)
4	5	FLOAT SWITCH
5	1	CONTROL CABLE BRACKET
6	1	CONTROL CONCRETE NET WELL
7	1	1"x3"x3" DOUBLE LEAF ALUMINUM HATCH W/ SS HINGES & S/LAMLOCK (300 PSF)
8	1	SAFETY NET
9	1	1" VENT W/ INSECT SCREEN
10	1	1" GALV STEEL CONSTRUCTION
11	2	1" DISCHARGE PFE
12	1	1" ELBOW
13	2	1" BALL CHECK VALVE
14	3	1" DIRECT DIRTY GATE VALVE
15	3	1" ELEC CPIC
16	1	REAR AS REQ'D
17	1	RESIDENT BOOT FOR 1" PIPE
18	1	ALL JOINTS MADE WATER-TIGHT W/ PLASTIC FLEXIBLE GASKET (RAM-NEK)
19	2	CAST IRON VALVE BOX



PLAN VIEW

STATION OPERATION LEVELS	
RISING LEVEL CYCLE	
WATER LEVEL ELEVATION	PUMPS IN OPERATION
XX.XX"	LEAD PUMP "ON"
XX.XX"	LEAD & LAG PUMPS "ON"
XX.XX"	LAG PUMP TURNS "ON"
XX.XX"	LAG & LAG PUMPS "ON"
XX.XX"	HIGH WATER "ALARM" LEVEL
XX.XX"	LEAD & LAG PUMPS "ON"
XX.XX"	LEAD & LAG PUMPS "OFF"
FALLING LEVEL CYCLE	
WATER LEVEL ELEVATION	PUMPS IN OPERATION
XX.XX"	ALL PUMPS "OFF" LAG PUMP SWITCHES TO LEAD PUMP
XX.XX"	ALL PUMPS "OFF" LAG PUMPS "ON"

PUMPS TO ALTERNATE THRU ALL PUMPS ONLY 2 PUMPS RUN AT A TIME



MODEL NUMBER: WXXX-AXTX-XXX-XX-XXX-XX

- POWER CHARACTERISTICS
 - 43 - 460V/3PH/60HZ
 - 43 - 460V/3PH/60HZ
 - 21 - 230V/1PH/60HZ
- PUMP MOTOR SIZE
 - 050 - 5.0 HP
 - 050 - 5.0 HP
 - 075 - 7.5 HP
 - 100 - 10.0 HP
 - 150 - 15.0 HP
 - 200 - 20.0 HP
- PUMP HEAD CAPACITY (TDH)
 - 10 - 10' TOTAL DYNAMIC HEAD
 - 20 - 20' TOTAL DYNAMIC HEAD
 - ETC...
- WET WELL SIZE (ID)
 - 48 - 48" DIA
 - 72 - 72" DIA
 - 96 - 96" DIA
- PUMP CONFIGURATION
 - S - SIMPLEX
 - D - DUPLEX
- PUMP DISCHARGE SIZE
 - 3 - 3"
 - 4 - 4"
 - 6 - 6"
 - 8 - 8"
- FLOW RATE CAPACITY (GPM)
 - 100 - 100 GPM
 - 200 - 200 GPM
 - ETC...

DRAWING NOT FOR SUBMITTAL
CONTACT PARKUSA FOR LIFT
STATION DESIGN ASSISTANCE.

PROJECT:
 CUSTOMER:
 ENGINEER:
 ORDER #
 DATE:
 LOCATION:

www.parkusa.com 888-611-PARK
 STORM SEWER LIFT STATION
 SUBMERSIBLE AXIAL PUMP STATION

REV.
 DATE 05/2019
 WXXX-AXT-3

SPECIFICATIONS
 CONCRETE:
 CLASS 1/1 CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR. FIRST STAGE OF WALL REINFORCED WITH SECTIONAL RIB TO REQUIRED DEPTH.

REINFORCEMENT:
 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 (AS REQUIRED) CENTERS OR EQUAL.

ALUMINUM HATCH:
 300 PSF RATED, 1/4" ALUMINUM SKID-RESISTANT FLOOR PLATE, STAINLESS STEEL TAMPERPROOF BOLTING & HINGES & S/LAMLOCK. (1-20 RATING OPTIONAL)

PUMP No.	TYPE	GPM	TDH	RPM	HP	V	PH	ELECTRICAL
1	AXIAL	XXXX	XX	XXX	X	XX	X	XX
1	AXIAL	XXXX	XX	XXX	X	XX	X	XX
1	AXIAL	XXXX	XX	XXX	X	XX	X	XX

CONTROLS:
 PUMP CONTROLS SHALL BE MOUNTED INSIDE A UL LISTED NEMA-4X ENCLOSURE AND INCLUDE CIRCUIT BREAKERS, ALARM CIRCUIT FUSE, IEC RATED MOTOR OVERLOAD RELAY, AND CIRCUIT BREAKER FOR TEST PANEL SHALL HAVE VISUAL ALARM RECOR. PANEL IS DESIGNED FOR REMOTE MOUNTING.

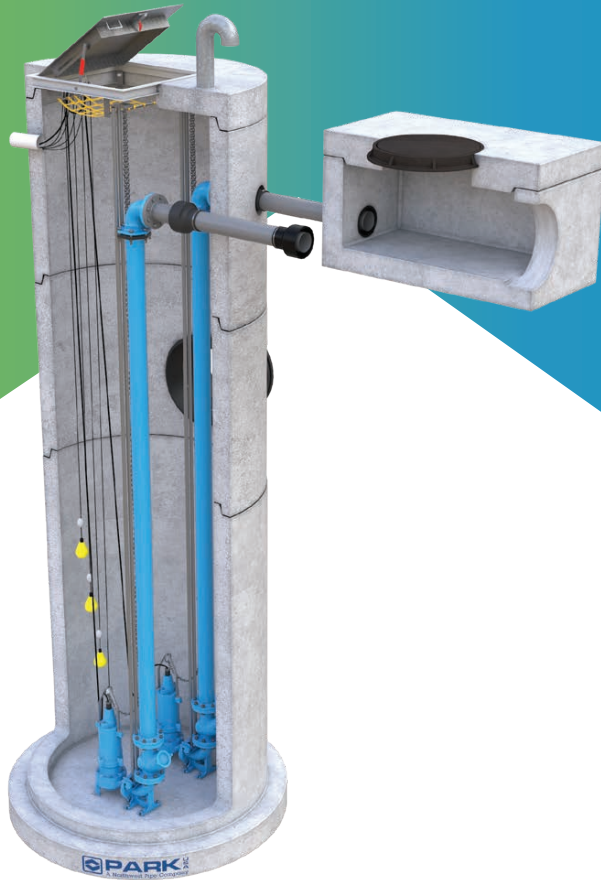
ENGINEERING DATA:
 PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF ASSEMBLY. USE DIMENSIONAL DATA AS SHOWN. ALL PIPE, VALVES AND FITTINGS OF THE ASSEMBLY ARE APPROVED BY ONE OF THE FOLLOWING ASSOCIATIONS:



NOTE:
 ALL DASHED PIPING TO BE FURNISHED BY CONTRACTOR

NOTE:
 VERIFY ALL ELEVATIONS PRIOR TO FABRICATION

NOTE:
 VERIFY ALL INLET/OUTLET ORIENTATIONS PRIOR TO FABRICATION



Lift Stations

ParkUSA®'s PumpTrooper®, a submersible pump lift station, is a reliable and cost-effective solution to prevent flooding by receiving and moving stormwater and/or sanitary wastewater to designated locations. Generally, a lift station is used to temporarily transfer liquid that can not flow by gravity on its own. This centrifugal pump system is powered by a close-coupled electric motor. The pumps operate quietly and are cooled by the moving liquid to maximize their lifespan.

Most pump stations are designed for multiple pump installations. The duplex system is the most common where the two pumps alternate in operation to equalize the wear of the pumps and to keep the wet well from solids build-up. The multiple pump system offers continued operation in the case of a pump failure, removal for servicing, and also provides extra capacity in times of extraordinary loading.

OEM Brands:



#BUILDING AMERICA!

SW PUMPTROOPER
Standard

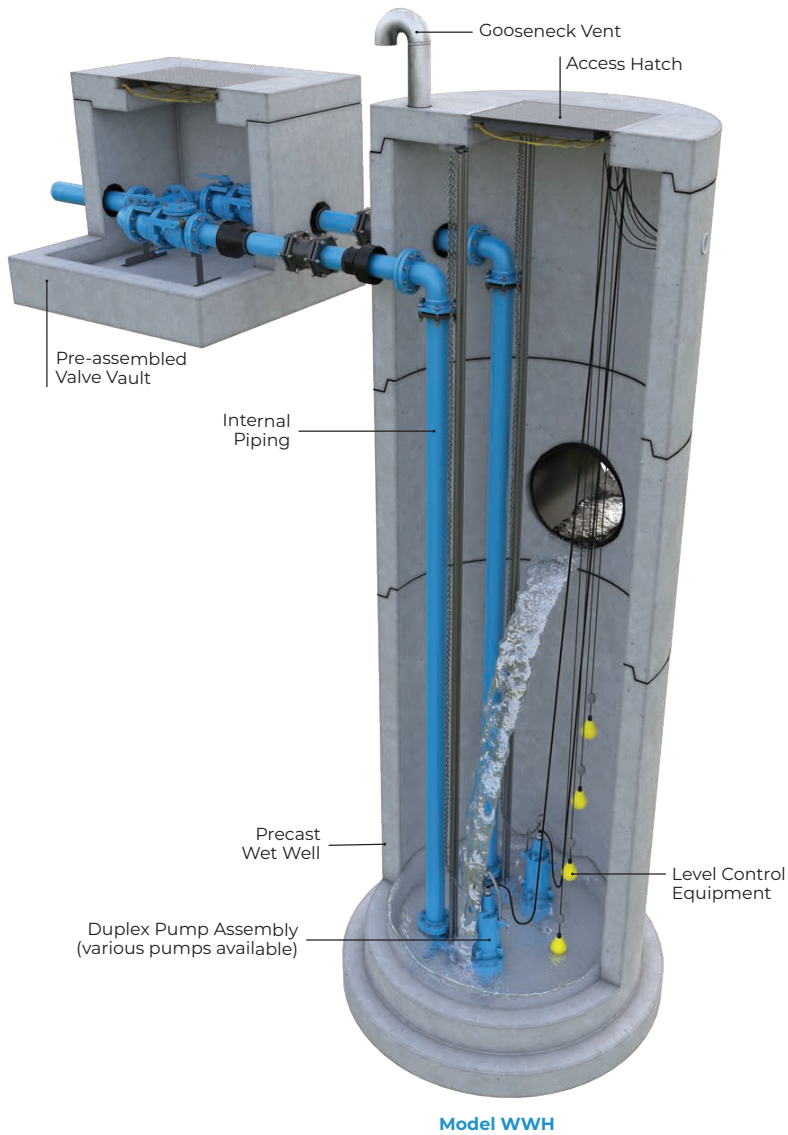
Pump Trooper®

Pump Lift Stations

Features

- Precast concrete or fiberglass models available
- Various pump types available
- Pedestrian or traffic rated
- Remote maintenance alarm available
- Interior liners available
- Meets all building codes





How it Works

Sanitary wastewater or storm water enters the wet-well basin through the inlet pipe. An electric liquid level control system monitors the water level and engages the pump(s) at predetermined levels. The pumps then transfer the liquid up and out of the wet-well basin into the sanitary or storm sewer system.

Visit pumptrooper.parkusa.com for more information and design assistance

To request a quote or catalog, visit request.parkusa.com.

Design Considerations

Depending on the project, the number of submersible pumps, as well as, the valve system are subject to change. In smaller stations, there can be one submersible pump and the valve assembly is housed within the wet well to save infrastructure cost. In larger stations, which can house multiple submersible pumps, it is recommended that the valve system be housed in a separate valve vault. This makes it easier to conduct maintenance when necessary.



Effluent Pumps



Axial Flow Pumps



Grinder Pumps



Vertical Turbine Flow Pumps

APPLICATIONS



Good to use
in BMPs



Hotels



Commercial



Industrial



Medical
Facilities

NOTES

A large grid area for taking notes, consisting of 30 columns and 30 rows of small squares. The grid is empty and occupies the central portion of the page.

Storm Trooper[®]
Stormwater Treatment System Patent No: 7,470,381



PARK
USA
A Northwest Pipe Company

**ENGINEERING
FACTS**

GENERAL INFORMATION

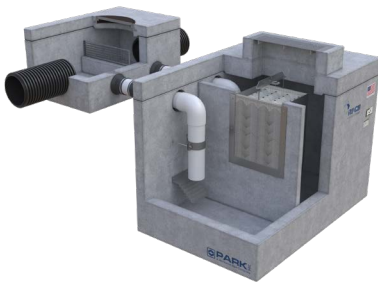
The ParkUSA Stormtrooper® model SWST is a product designed to remove sediments and oil from stormwater runoff. The unit consists of a control manhole connected to a separator unit (Model SWST, which can be with circular or rectangular separator box) or a separator unit with a flow control system inside of it (SWAQ). Both models are patented and comply with the full regulations and performance tests.

Stormwater runoff from urban areas carries pollutants and trash into the storm drainage system. Unlike sanitary sewer systems, stormwater typically receives no treatment. Polluted stormwater eventually drains into public waterways, rivers, aquifers, lakes, and oceans. The pollutants can contain significant amounts of oils and sediment from impervious areas, which could be harmful to the environment, both biologically and aesthetically.

Although dramatic improvements have been made to the Nation's waters, degraded bodies of water still exist. Approximately 40 percent of surveyed U.S. bodies of water are still impaired by pollution and do not meet current water quality standards. A leading source of this impairment is polluted runoff.

Most stormwater discharges are considered nonpoint sources and require coverage by an EPA NPDES permit. The primary method to control stormwater discharge is through the use of Best Management Practices (BMP).

SWST V SWST-C V SWAQ



Model SWST



Model SWST-C

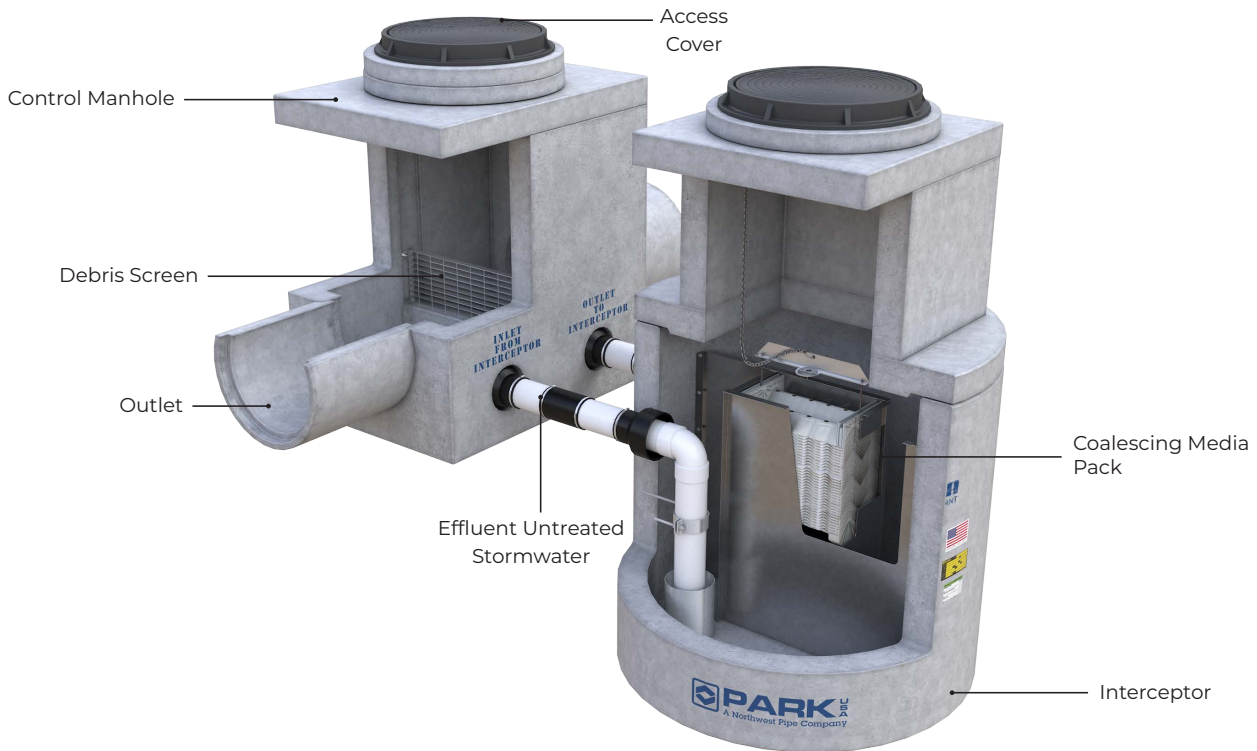


Model INTFG

FEATURES

- Wide Range of Models and Capacities Available
- Customizable Design to Adapt to Jobsite Configuration
- Prepacked System for Easy Installation
- Oil Removal Through an Engineered Coalescing Media
- Coating Options Available for Different Environmental Conditions
- Low and High Flow Capabilities

The ParkUSA Stormtrooper® model SWST is a product designed to remove sediments and oil from stormwater runoff. The unit consists of a control manhole connected to a separator unit (Model SWST, which can be with circular or rectangular separator box) or a separator unit with a flow control system inside of it (SWAQ). Both models are patented and comply with the full regulations and performance tests.



Stormwater
Quality

SYSTEM COMPONENTS

The StormTrooper shall consist of a control manhole connected to a separator unit to remove debris (TSS) and hydrocarbons from stormwater.

The Control Manhole, shall tie directly into the storm sewer line by means of a connection as specified in section ASTM C923. The control manhole shall contain a cast weir wall to divert flow through the separator unit for treatment of the first flush. The weir wall shall have a trash screen attached to retain large debris when the unit is under standard flow conditions.

The Separator Unit, shall be connected to the control manhole by means of a flexible resilient rubber boot. The unit shall maintain a minimum separation of 36 inches between the Control Manhole and the Separator Unit.

The Separator Unit shall contain a prefabricated corrugated plate for intermittent and variable flows of water, oil or any combination of non-emulsified oil-water mixtures ranging from zero-flow up to 100 percent of the maximum hydraulic capacity. This will allow the separator unit to maintain an acceptable water effluent.

OPERATION

The function of the StormTrooper stormwater interceptor model SWST is to intercept free oils/solids and retain them for periodic removal. The StormTrooper interceptor is designed to treat a finite amount of stormwater, typically sized for the initial flow rate of a storm event. Most studies have shown that the pollutants are found in this “first-flush” stormwater discharge.

Stormwater runoff can range from low to very high flow rates. A high flow rate can be detrimental to a stormwater interceptor in that excessive flows tend to scour (stir up) the existing retained pollutants left from the previous storm event. The StormTrooper controls high flow rates by utilizing a control manhole. The control manhole is engineered to divert the design flow through the interceptor while bypassing high flows to the storm sewer.

Low Flow: Stormwater runoff flows into the inlet of the control manhole. Stormwater is then diverted from the bypass weir to the interceptor. The stormwater debris, oils, and sediments are filtered and separated. The flow is discharged via the outlet of the control manhole to the Municipal Separate Storm Sewer System (MS4).

High Flow: Stormwater runoff flows into the inlet of the control manhole. During high flow conditions, stormwater

rises over the bypass weir and is discharged via the outlet of the control manhole to the MS4. Trash is collected in the control manhole debris screen.

Treated Stormwater: As water enters the treatment chamber of the interceptor, trash and light debris are filtered through a screen; heavy oils immediately rise to the surface, Total Suspended Solids (TSS) sink to the bottom. The remaining oily water mixture flows through the second chamber. Both the smaller oil droplets and the finer TSS are progressively separated. Coalescing media is used to separate significant concentrations of hydrocarbons. In the final stage, effluent is discharged at the bottom of the interceptor preventing collected pollutants from entering the outlet piping. Collected oils and solids will remain in the interceptor until removal.

DESIGN CONSIDERATIONS

The separator tank is designed to conform to ASTM C913 "Standard Specification for Precast Concrete Water and Wastewater Structures", the weight of the soil above shall be capable of withstanding a live load equal to an AASHTO HS-20 or HL93 highway loading using full impact load or 300 psf applied to the top slab.

All exterior walls of the tank shall be designed for an equivalent fluid pressure of 85 lbs/ft². Structure shall be designed to resist buoyant uplift forces with a factor of safety of not less than 1.10. The top of the pressure diagram shall be assumed to originate at finished ground level. Additional lateral pressure from approaching truck wheels and/or 300 psf surcharge shall be considered in accordance with AASHTO Standard Specification for Highway Bridges.

MAINTENANCE

The frequency of cleaning at any given installation will vary depending on use. The StormTrooper® stormwater interceptor should be cleaned (or pumped out) routinely to prevent the escape of appreciable quantities of detained pollutants. Sediment should be removed before accumulations effectively reduce storage capacity and detention time of the interceptor. Hydrocarbon- absorbing pillows, when used, should be properly disposed of and replaced when full. A professional pumping company familiar with regulations regarding proper disposal should pump out the interceptor.

SIZING

Under the Storm Water Phase II Final Rule, urbanized areas where construction disturbs one acre or more must develop water quality controls. The Final Rule requires a water quality system design that will reduce total suspended solids (TSS) loadings by an average of 80 percent annually. A professional engineer must develop a Best Management Practice Plan (BMP) to obtain a NPDES number from permitting authorities. Typically, a designer utilizes site specific runoff coefficients and rainfall intensity rates to develop the hydrology calculations and structural control systems that become a Storm Water Quality Management Plan (SWQMP) or BMP.

Using the "First Flush Principle" has become the acceptable means of determining treated stormwater flow rates. The initial runoff flow will be more polluted than the stormwater that runs off later, after the rainfall has "cleansed" the catchment area. The stormwater containing this high initial pollutant load will be treated with the StormTrooper Stormwater Interceptor. Most studies have found that significant concentration pollutant loads are retained when at least 90 percent of the storm events are treated.

To determine the treated flow rate required of the stormwater interceptor, the flow rate of the first flush is estimated. An accepted practice is to calculate the drainage using the Rational Method for estimating design peak discharge from a small watershed or the total acreage of a development.

The StormTrooper System should be located downstream of stormwater runoff for maximum performance, typically the final conveyance before stormwater exits the property. The stormwater interceptor is usually buried allowing for gravity flow of the runoff. The interceptor should be installed and located so that it will be easily accessible for inspection, cleaning, and removal of separated pollutants. There should be an adequate number of interceptor access openings to permit cleaning of all compartments. All access manholes should extend to grade.

The StormTrooper interceptor is designed for stormwater runoff from typical commercial applications where light amounts of oil & contaminants are found (e.g., parking lots). For Industrial applications where excessive pollutants are present, the StormTrooper® EX Extra-Duty (over 1000 ppm) is recommended.

CYLINDRICAL DESIGNS	GALLONS	GPM	CFS
SWST- 05C	500	300	0.67
SWST- 06C	600	400	0.89
SWST- 08C	800	500	1.11
SWST- 10C	1,000	650	1.45
SWST- 15C	1,500	875	1.95
SWST- 20C	2,000	1,125	2.51
SWST- 25C	2,500	1,375	3.06
SWST- 30C	3,000	1,600	3.56
SWST- 35C	3,500	1,775	3.95
SWST- 40C	4,000	1,950	4.34
SWST- 45C	4,500	2,150	4.79
SWST- 50C	5,000	2,350	5.23
SWST- 60C	6,000	2,675	5.96

Table 1

RECTANGULAR DESIGNS	GALLONS	GPM	CFS
SWST- 10	1,000	650	1.45
SWST- 15	1,500	875	1.95
SWST- 20	2,000	1,125	2.51
SWST- 25	2,500	1,375	3.06
SWST- 30	3,000	1,600	3.56
SWST- 35	3,500	1,775	3.95
SWST- 40	4,000	1,950	4.34
SWST- 45	4,500	2,150	4.79
SWST- 50	5,000	2,350	5.23
SWST- 60	6,000	2,675	5.96
SWST- 70	7,000	3,000	6.68
SWST- 80	8,000	3,325	7.41
SWST- 90	9,000	3,625	8.07
SWST- 100	10,000	3,900	8.69
SWST- 110	11,000	4,175	9.30
SWST- 120	12,000	4,425	9.86
SWST- 130	13,000	4,725	10.52
SWST- 140	14,000	4,950	11.02
SWST- 150	15,000	5,200	11.58

Table 2

 Stormwater
 Quality

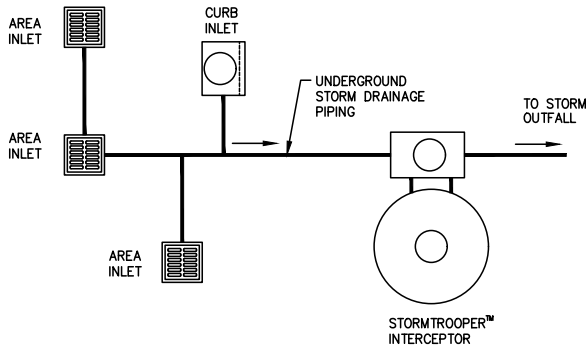


FIGURE 1 – GRAVITY FLOW

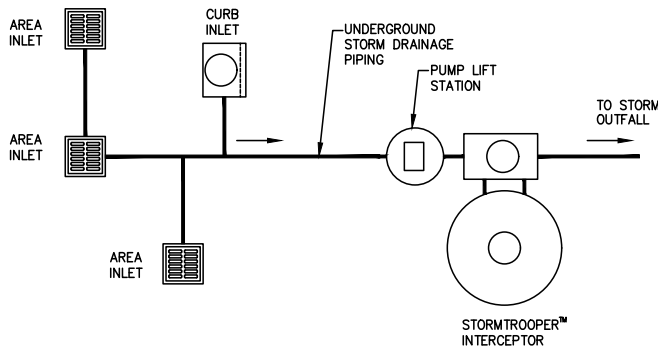


FIGURE 2 – PUMPED FLOW



STORMWATER INTERCEPTOR
TYPICAL APPLICATIONS



www.parkusa.com

888-611-PARK

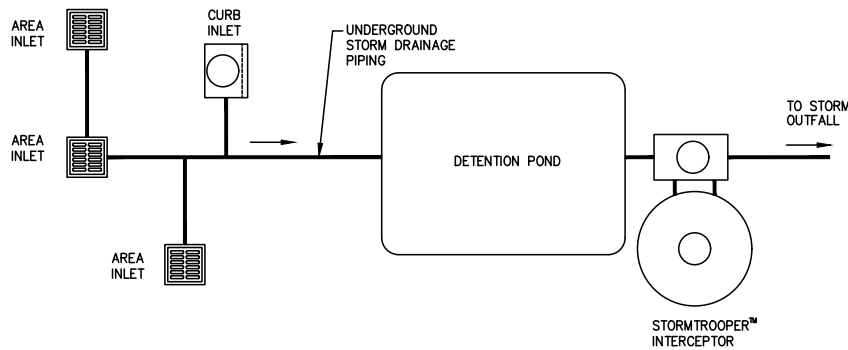
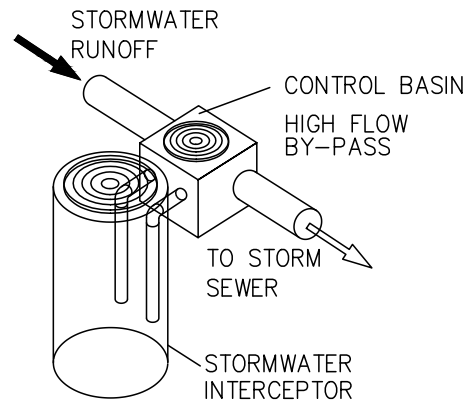


FIGURE 3 – GRAVITY FLOW w/ DETENTION POND

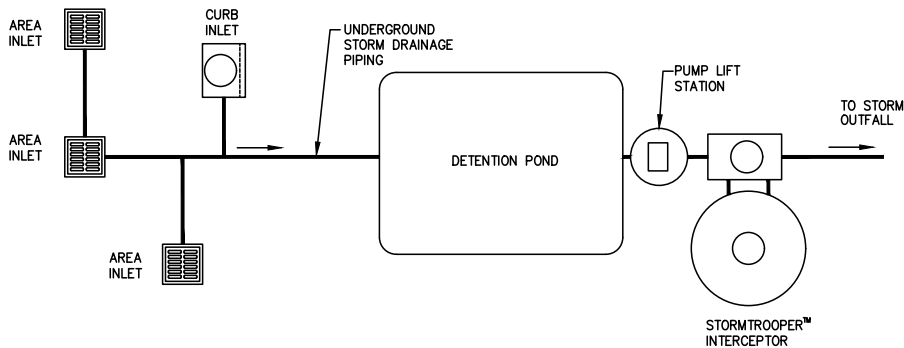


FIGURE 4 – PUMPED FLOW w/ DETENTION POND

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MARK	QTY	DESCRIPTION	KEYED NOTES
1	1	DEBRIS SCREEN, SS	
2	1	INLET MANHOLE	
3	1	INTERCEPTOR INLET PIPING	
4	1	CONCRETE MEDIA PACK TO GRADE	
5	1	OSHA MANHOLE STEPS	
6	1	W/ JOINTS TO BE SEALED	
7	1	W/ PLASTIC FLEXIBLE GASKET	
8	1	OUTLET MANHOLE	
9	1	UTILE FOR STORM WATER PIPING (TYP.) ALL PIPES PROVIDED BY OTHERS	
10	1	NAMEPLATE INDICATING MFG: PARKUSA 888-611-PARK.COM MODEL: STORMTROOPER SERIAL: #XXXXXX	



NAMEPLATE

THE STORMTROOPER STORMWATER INTERCEPTOR IS DESIGNED TO RECEIVE & TREAT STORMWATER RUNOFF ON A GRAVITY-FLOW AND ONCE-THROUGH BASIS.

GUARANTEED PERFORMANCE PRE-ENGINEERED COALESCING MEDIA PACKS ARE UTILIZED FOR ENHANCED SEPARATION OF OILS, GREASES, AND SOLIDS FROM STORMWATER COMPARED TO OTHER SEPARATORS WHICH UTILIZE BATTERIES OR DIVERTERS.

APPLICATIONS

THE PARK STORM-TROOPER INTERCEPTOR IS DESIGNED FOR STORMWATER RUNOFF FROM COMMERCIAL & INDUSTRIAL APPLICATIONS WHERE EXCESSIVE POLLUTANTS MAY HARM THE ENVIRONMENT OR DAMAGE SEWER SYSTEMS.

CONTROL MANHOLE

A FULL SIZE BY-PASS DIVERTS STORMWATER DURING HEAVY PEAK STORM PERIODS. THIS ALLOWS FOR OPTIMAL INTERCEPTOR SIZING.

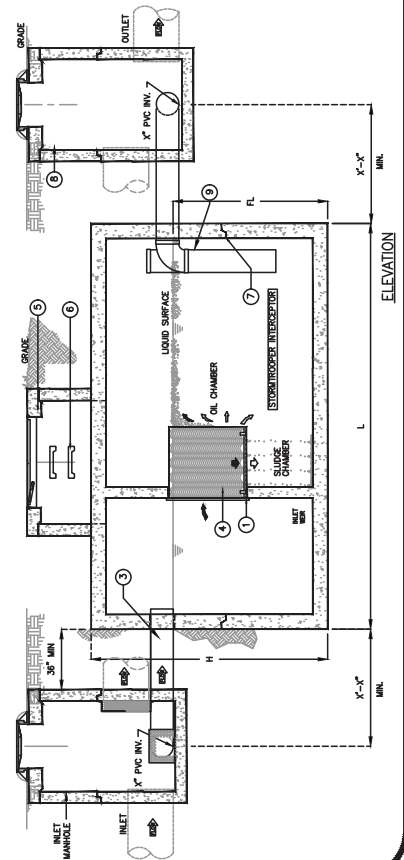
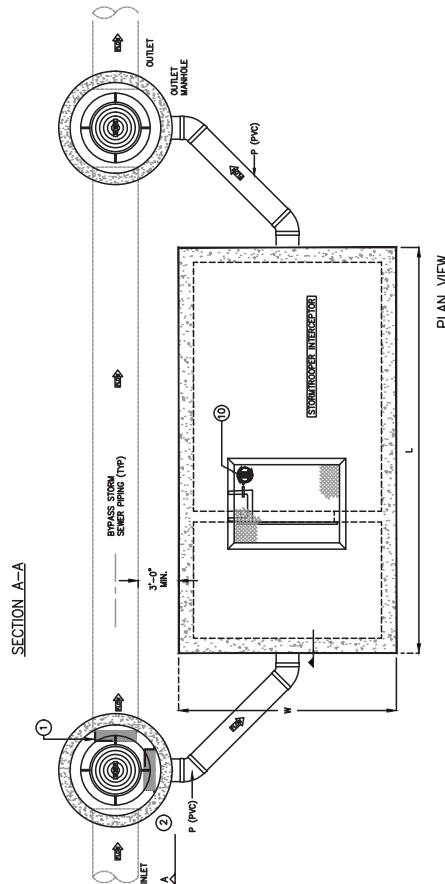
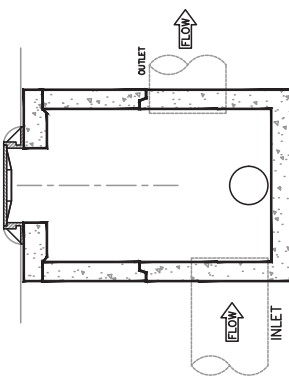
MAINTENANCE

THE PARK STORM-TROOPER INTERCEPTOR REQUIRES MINIMAL MAINTENANCE. HYDROCARBONS AND SOLIDS ARE REMOVED FROM THE STORMWATER VIA PRE-ENGINEERED MEDIA PACKS. REGULAR MAINTENANCE APPLICATIONS, THE COALESCING MEDIA PACK IS RECOMMENDED.

THESE POLLUTANTS ARE REMOVED FROM THE STORMWATER AND SERVICED BY A LICENSED VACUUM TRUCK OPERATOR.

CALL US

CONTACT OUR ENGINEERING DEPARTMENT FOR SPECIFIC PERFORMANCE INFORMATION.



STORMTROOPER, U.S. PATENT 7,470,361

MODEL NO.	STORMWATER INTERCEPTOR SCHEDULE			TREATMENT PERFORMANCE			DIMENSIONS			
	STD. DUTY	WATER CAPACITY USGAL	FLOWRATE GPM CFS	SOLIDS FT ³	LENGTH L	WIDTH W	LENGTH L	WIDTH W	HEIGHT H	PIPE SIZE P
STDM-10	1,000	1,500	650 1.45	60	460	8'-8"	5'-0"	4'-6"	6'-0"	4"
STDM-15	1,500	2,000	875 1.95	115	570	9'-2"	5'-8"	5'-8"	7'-0"	4"
STDM-20	2,000	2,500	1,125 2.51	130	1,080	13'-0"	7'-0"	4'-8"	5'-10"	6"
STDM-25	2,500	3,000	1,375 3.06	145	1,080	13'-0"	7'-0"	5'-8"	7'-0"	6"
STDM-30	3,000	3,500	1,650 3.58	215	1,080	13'-0"	7'-0"	6'-8"	8'-0"	6"
STDM-35	3,500	4,000	1,775 3.95	280	1,080	16'-0"	7'-0"	6'-10"	8'-4"	8"
STDM-40	4,000	4,500	1,950 4.34	340	1,680	16'-0"	8'-6"	6'-8"	7'-0"	8"
STDM-50	5,000	5,500	2,675 5.96	450	1,680	16'-0"	8'-6"	7'-6"	8'-0"	8"
STDM-60	6,000	6,500	3,000 6.68	500	2,375	18'-0"	9'-0"	7'-8"	9'-2"	10"
STDM-70	7,000	7,500	3,325 7.41	635	2,375	18'-0"	9'-0"	8'-6"	10'-0"	10"
STDM-80	8,000	8,500	3,625 8.07	770	2,375	18'-0"	9'-0"	9'-4"	10'-10"	10"
STDM-90	9,000	9,500	3,900 8.69	910	2,375	18'-0"	9'-0"	10'-6"	12'-0"	12"
STDM-100	10,000	10,500	4,175 9.30	830	3,490	21'-2"	11'-2"	8'-0"	9'-6"	12"
STDM-110	11,000	11,500	4,425 9.86	970	3,490	21'-2"	11'-2"	8'-6"	10'-0"	12"
STDM-120	12,000	12,500	4,675 10.52	1,070	3,740	21'-2"	11'-2"	9'-0"	10'-6"	14"
STDM-130	13,000	13,500	4,925 11.18	1,200	3,740	21'-2"	11'-2"	9'-8"	11'-2"	14"
STDM-140	14,000	14,500	5,175 11.84	1,335	3,740	21'-2"	11'-2"	10'-0"	12'-2"	14"
STDM-150	15,000	15,500	5,425 12.50	1,470	3,740	21'-2"	11'-2"	10'-2"	12'-2"	14"

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION

APPLICATIONS

- COMMERCIAL
- INDUSTRIAL
- RESIDENTIAL
- INSTITUTIONAL
- REDEVELOPMENT
- MPDES - MUNICIPAL/INDUSTRIAL
- BMP STRUCTURAL SOLUTION



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PROJECT: _____
 CUSTOMER: _____
 ENGINEER: _____
 ORDER #: _____
 DATE: _____

PROJ. #: _____
 LOCATION: _____

PARK
 www.parkusa.com 888-611-PARK
 STORMWATER INTERCEPTOR
 STORMTROOPER MODEL STDM

REV. _____
 DATE 05/2019
 STDM-1

SPECIFICATIONS

CONCRETE: CLASS A/1 CONCRETE WITH DESIGN STRENGTH OF 4,000 PSI. CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

MATERIALS: ACCESS FRAME & COVER SHALL BE FABRICATED WITH 1/4" THICK MONSIEUR FLOOR PLATE, BOTTOMDOWN, GASKETED, & LIFTING HANDLES. ALL MATERIALS TO BE CORROSION RESISTANT.

ENGINEERING DATA: THIS UNIT IS SPECIALLY AND INDEPENDENTLY ENGINEERED CONFORMING TO REGULAR STANDARDS. NOMINAL TOTAL LIQUID CAPACITY AND OIL HOLDING CAPACITY AS INDICATED.

STORMWATER INTERCEPTORS ARE UTILIZED TO REDUCE NON-POINT SOURCE POLLUTION ASSOCIATED WITH OIL AND SEDIMENT. THE INTERCEPTOR IS DESIGNED TO ALLOW FOR THE SETTLEMENT OF SETTLEABLE & FLOABLE SOLIDS & LIQUIDS. THE INTERCEPTOR SHOULD BE MAINTAINED ON A REGULAR BASIS TO DETERMINE PROPER OPERATION AND CLEANING.

Stormwater Quality

MAX PIPE SIZE (IN)	CONTROL BASIN WIDTH
30"	4'-0"
36"	5'-0"
48"	6'-0"
60"	7'-0"

GENERAL INFORMATION

PARK STORMTROOPER INTERCEPTOR
THE STORMTROOPER STORMWATER INTERCEPTOR IS DESIGNED TO RECEIVE & TREAT STORMWATER RUNOFF ON A GRAVITY-FLOW AND ONCE-THROUGH BASIS.

GUARANTEED PERFORMANCE
PRE-ENGINEERED COALESCING MEDIA PACKS ARE UTILIZED FOR ENHANCED SEPARATION OF OILS AND SOLIDS FROM STORMWATER COMPARED TO OTHER SEPARATORS WHICH UTILIZE BAFFLES OR DIVERTERS.

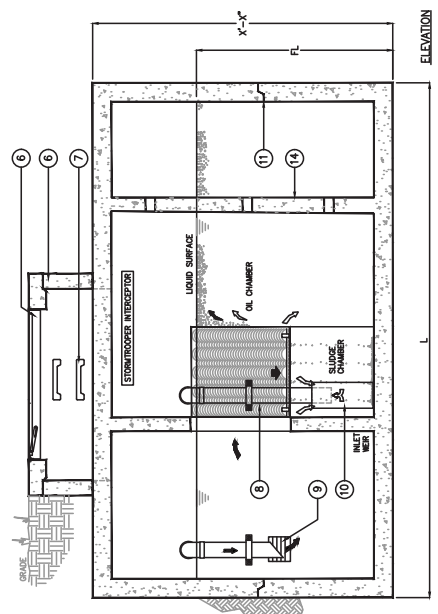
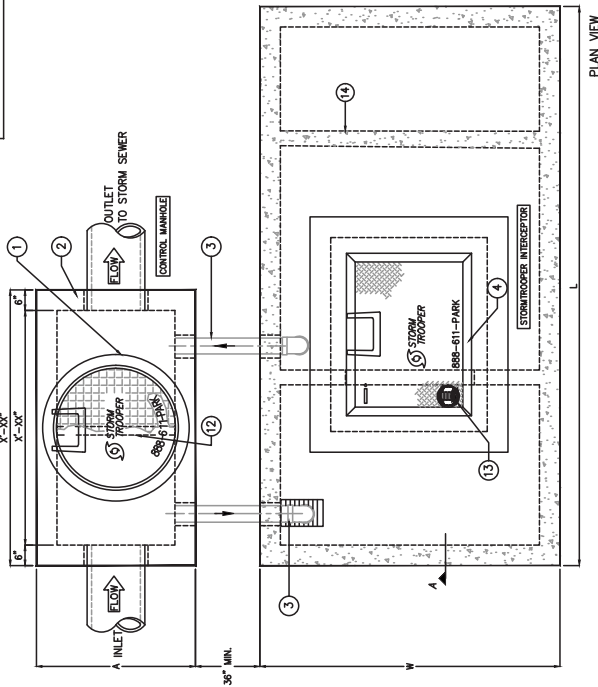
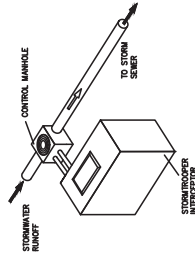
APPLICATIONS
THE PARKUSA STORMTROOPER INTERCEPTOR IS DESIGNED FOR USE IN COMMERCIAL, INDUSTRIAL AND RESIDENTIAL AREAS WHERE EXCESSIVE POLLUTANTS MAY HARM THE ENVIRONMENT OR DAMAGE SEWER SYSTEMS.

BY-PASS DESIGN
THE UNIQUE DESIGN OF THE CONTROL BASIN & SEWAGE BY-PASS VALVE PERMITS UNTREATED STORMWATER TO ENTER THE INLET COMPARTMENT AND IS DIVERTED TO THE INTERCEPTOR FOR TREATMENT. CLEAN STORMWATER CAN BE WITNESSED IN THE EFFLUENT COMPARTMENT AFTER TREATMENT.

MAINTENANCE

STORMTROOPER HAS BECOME KNOWN IN THE INDUSTRY AS THE MOST ACCESSIBLE AND EASY TO MAINTAIN INTERCEPTOR. ALL VALVE ENTRY ACCESSIBLE FOR MAINTENANCE. ALL COMPARTMENTS ALLOW FOR THE LARGER HOSE ASSOCIATED WITH VACUUM TRUCK PUMP OUT. MAINTENANCE INSTRUCTIONS AND LOGS ARE AVAILABLE FROM PARK ENGINEERING.

CALL US PARK ENGINEERING FOR HELP SIZING, SPECIFICATIONS AND PERFORMANCE INFORMATION.



NAMEPLATE

MARK QTY	DESCRIPTION
1	30" DIA DUCTILE IRON RING W/ COVER, H2O TRAFFIC DUTY
2	CONTROL MANHOLE FOR BY-PASS DIVERSION DURING HIGH FLOW
3	1 INVERTED CONCRETE CHIMNEY
4	1 INTERCEPTOR COALESCING MEDIA PACK
5	1 INTERCEPTOR COALESCING MEDIA PACK
6	1 CONCRETE EXTENSION RINGS AS REQD
7	1 OSHA MANHOLE STEPS AS REQD
8	1 COALESCING MEDIA PACK
9	1 DIFFUSION BAFFLE
10	1 DIFFUSION BAFFLE
11	1 ALUMINUM JOINTS TO BE SEALED W/ PLASTIC
12	1 CONTROL MANHOLE DEBRIS SCREEN
13	1 NAMEPLATE INDICATING: MFG: PARKUSA 888-611-PARK WWW.PARKUSA.COM DATE MANUFACTURED SERIAL # XXXXX
14	1 STRUCTURAL SUPPORT WALL FOR SIZES GREATER THAN SWST-60

STORMTROOPER, U.S. PATENT 7,470,361

MODEL NO.	TOTAL CAPACITY USGPD	FLOWRATE GPM	CFD	INLET DIAMETER FT	INLET LENGTH FT	INLET WIDTH FT	INLET HEIGHT FT	INLET FL	INLET H
SWST-05	500	300	0.67	25	165	7'-10"	4'-4"	3'-3"	5'-3"
SWST-06	600	400	0.89	36	188	7'-10"	4'-4"	3'-10"	5'-10"
SWST-08	800	500	1.11	50	264	9'-0"	4'-4"	4'-0"	6'-0"
SWST-10	1,000	650	1.45	60	460	9'-0"	6'-0"	4'-6"	6'-0"
SWST-15	1,500	875	1.95	115	570	9'-0"	6'-0"	5'-6"	7'-0"
SWST-20	2,000	1,125	2.51	130	1,080	13'-0"	6'-0"	6'-6"	8'-0"
SWST-25	2,500	1,375	3.06	145	1,080	13'-0"	7'-0"	5'-6"	7'-0"
SWST-30	3,000	1,600	3.56	215	1,080	13'-0"	7'-0"	6'-6"	8'-0"
SWST-35	3,500	1,775	3.95	290	1,080	13'-0"	7'-0"	6'-10"	8'-4"
SWST-40	4,000	1,950	4.34	225	1,680	16'-0"	8'-6"	5'-6"	7'-10"
SWST-45	4,500	2,150	4.79	330	1,680	16'-0"	8'-6"	6'-0"	8'-0"
SWST-50	5,000	2,350	5.23	340	1,680	16'-0"	8'-6"	6'-0"	8'-0"
SWST-60	6,000	2,675	5.96	450	1,680	16'-0"	8'-6"	7'-6"	9'-0"
SWST-70	7,000	3,000	6.68	500	2,375	18'-0"	9'-0"	7'-6"	9'-2"
SWST-80	8,000	3,325	7.41	635	2,375	18'-0"	9'-0"	8'-6"	10'-0"
SWST-90	9,000	3,625	8.07	770	2,375	18'-0"	9'-0"	9'-4"	10'-10"
SWST-100	10,000	3,900	8.69	830	2,375	18'-0"	11'-2"	7'-2"	9'-6"
SWST-110	11,000	4,175	9.30	910	3,480	21'-2"	11'-2"	8'-0"	9'-6"
SWST-120	12,000	4,425	9.86	970	3,480	21'-2"	11'-2"	8'-6"	10'-0"
SWST-130	13,000	4,675	10.52	1,070	3,740	21'-2"	11'-2"	9'-0"	10'-6"
SWST-140	14,000	4,925	11.02	1,200	3,740	21'-2"	11'-2"	9'-8"	11'-2"
SWST-150	15,000	5,200	11.56	1,335	3,740	21'-2"	11'-2"	10'-6"	12'-2"

*OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION

*INCLUDES ADDITIONAL STRUCTURAL SUPPORT WALL



SPECIFICATIONS

CONCRETE :
CLASS 1/1 CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT:
GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

D.I. CASTINGS:
MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED OF DUCTILE IRON CONFORMING TO ASTM A153. MANHOLE SHALL BE NOMINAL 24" DIAMETER AND BE TRAFFIC DUTY.

STEEL COVER:
GALVANIZED STEEL SKID-RESISTANT SINGLE LEAF H-20 LOADED.

ENGINEERING DATA

INTERCEPTOR IS STRUCTURALLY AND HYDRAULICALLY ENGINEERED CONFORMING TO REGULATORY STANDARDS. NOMINAL TOTAL LIQUID CAPACITY AND OIL HOLDING CAPACITY AS INDICATED.

STORMWATER INTERCEPTORS ARE UTILIZED TO REDUCE NON-POINT SOURCE POLLUTION ASSOCIATED WITH OIL AND DEBRIS. THE INTERCEPTOR IS DESIGNED TO BE MAINTAINED BY THE USER. THE INTERCEPTOR SHOULD BE INSPECTED ON A REGULAR BASIS TO DETERMINE PROPER OPERATION AND CLEANING.

PROJECT:
 CUSTOMER:
 ENGINEER:
 ORDER #:
 DATE:

PROJ # :
 LOCATION:

PARK
 www.parkusa.com 888-611-PARK
 STORMWATER INTERCEPTOR
 STORMTROOPER MODEL SWST 05 THRU 150

REV.
 DATE 05/2019
 SWST-1



PARK STORM-TROOPER INTERCEPTOR
THE STORM-TROOPER STORMWATER INTERCEPTOR IS DESIGNED TO PREVENT OIL AND GREASE FROM RAINFALL OR A GRADIENT-FLOW AND ONCE-THROUGH BASIS.

GUARANTEED PERFORMANCE
PRE-ENGINEERED COALESCING MEDIA PACKS ARE UTILIZED FOR ENHANCED SEPARATION CAPACITY. STORMWATER SEPARATORS WHICH UTILIZE BAFFLES OR DIVERTERS.

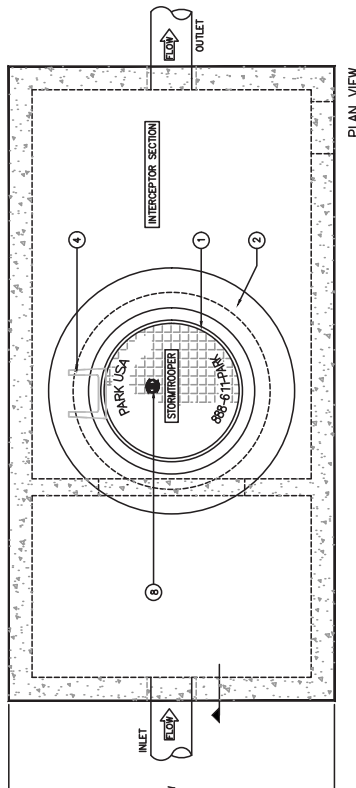
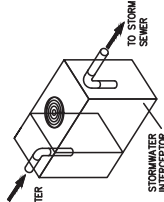
MAINTENANCE
THE PARK STORM-TROOPER INTERCEPTOR REQUIRES MINIMAL MAINTENANCE. HYDROCARBONS AND SOLIDS ARE REMOVED FROM THE STORMWATER VIA COALESCING MEDIA PACKS. THE COALESCING MEDIA PACK IS RECOMMENDED.

THESE POLLUTANTS ARE REMOVED FROM THE SEPARATOR WHEN SERVICED BY A LICENSED VACUUM TRUCK OPERATOR.

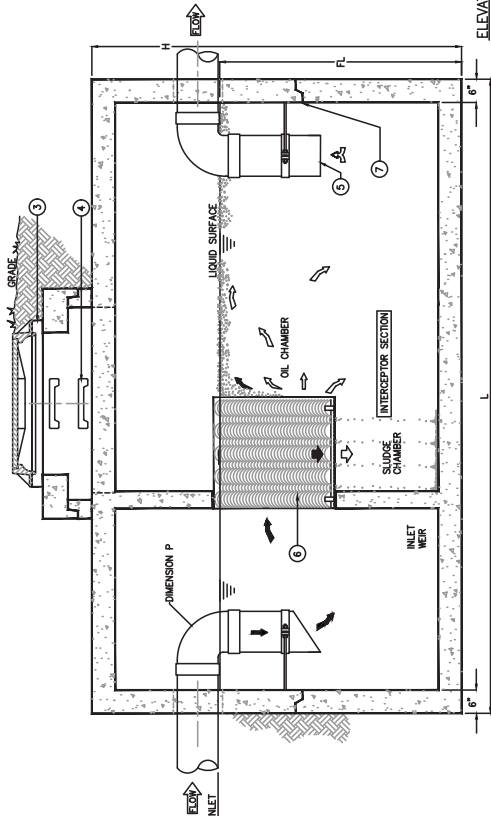
APPLICATIONS

- DESIGNED FOR STORMWATER RUNOFF FROM COMMERCIAL & INDUSTRIAL APPLICATIONS WHERE EXCESSIVE POLLUTANTS MAY HARM THE ENVIRONMENT OR DAMAGE SEWER SYSTEMS.

CALL US
CONTACT OUR ENGINEERING DEPT. FOR SPECIFIC PERFORMANCE INFORMATION.



PLAN VIEW



ELEVATION

MARK	QTY	KEYED NOTES
1	1	30" DIA DUCTILE IRON RING W/ COVER, H2O TRAFFIC DUTY
2	1	48" DIA RISER
3	1	CONCRETE EXTENSION RINGS TO GRADE
4	1	OSHA MANHOLE STEPS
5	1	OIL DAM PIPING
6	1	COALESCING MEDIA PACK
7	1	ALL JOINTS TO BE SEALED W/ PLASTIC FLEXIBLE GASKET
8	1	NAMEPLATE INDICATING: MFG: PARKUSA.COM WWW.PARKUSA.COM PHONE: 888-611-PARK DATE MANUFACTURED SERIAL #XXXXXX

- APPLICATIONS**
- COMMERCIAL
 - INDUSTRIAL
 - RESIDENTIAL
 - RESTAURANT
 - REDEVELOPMENT
 - MPDES - MUNICIPAL/INDUSTRIAL
 - BMP STRUCTURAL SOLUTION

STORMTROOPER, U.S. PATENT 7,470,361
STORMWATER INTERCEPTOR SCHEDULE

MODEL NO.	TOTAL CAPACITY		TREATMENT PERFORMANCE		DIMENSIONS					
	USGPD	GPM	FLOWRATE GPM	SOLIDS FT	LENGTH L	WIDTH W	FLOWLINE HEIGHT PIPE SIZE H			
SWST-05	500	300	0.67	24	165	7'-10"	4'-4"	3'-3"	5'-3"	4"
SWST-06	600	400	0.89	36	198	7'-10"	4'-4"	3'-10"	5'-10"	4"
SWST-08	800	500	1.11	50	284	7'-10"	4'-4"	4'-0"	6'-0"	4"
SWST-10	1,000	650	1.45	60	460	9'-0"	6'-0"	4'-6"	6'-0"	4"
SWST-15	1,500	875	1.95	115	570	9'-0"	6'-0"	5'-6"	7'-0"	4"
SWST-20	2,000	1,125	2.51	130	1,080	9'-0"	6'-0"	6'-6"	8'-0"	6"
SWST-25	2,500	1,375	3.06	145	1,080	13'-0"	7'-0"	6'-6"	8'-0"	6"
SWST-30	3,000	1,600	3.56	215	1,080	13'-0"	7'-0"	6'-6"	8'-0"	6"
SWST-35	3,500	1,775	3.95	290	1,080	13'-0"	7'-0"	6'-10"	8'-4"	6"
SWST-40	4,000	1,950	4.34	225	1,680	16'-0"	8'-6"	6'-6"	8'-10"	6"
SWST-45	4,500	2,150	4.79	330	1,680	16'-0"	8'-6"	6'-6"	8'-10"	6"
SWST-50	5,000	2,350	5.23	340	1,680	16'-0"	8'-6"	6'-6"	8'-10"	6"
SWST-60	6,000	2,675	5.96	450	1,680	16'-0"	8'-6"	7'-6"	8'-0"	6"
SWST-70	7,000	3,000	6.68	600	2,375	16'-0"	8'-0"	7'-6"	8'-2"	10"
SWST-80	8,000	3,325	7.41	635	2,375	16'-0"	8'-0"	8'-6"	10'-0"	10"
SWST-90	9,000	3,650	8.07	770	2,375	16'-0"	8'-0"	9'-0"	10'-10"	12"
SWST-100	10,000	3,950	8.69	830	2,375	24'-2"	11'-2"	9'-0"	8'-8"	12"
SWST-110	11,000	4,175	9.30	910	3,480	21'-2"	11'-2"	8'-0"	8'-6"	12"
SWST-120	12,000	4,425	9.86	970	3,480	21'-2"	11'-2"	8'-6"	10'-0"	12"
SWST-130	13,000	4,725	10.52	1,070	3,740	21'-2"	11'-2"	9'-0"	10'-6"	14"
SWST-140	14,000	4,950	11.02	1,200	3,740	21'-2"	11'-2"	9'-6"	11'-2"	14"
SWST-150	15,000	5,200	11.58	1,335	3,740	21'-2"	11'-2"	10'-8"	12'-2"	14"

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION.



PROJECT:
 CUSTOMER:
 ENGINEER:
 ORDER # : PROJ # :
 DATE: LOCATION:

www.parkusa.com 888-611-PARK
 STORMWATER INTERCEPTOR
 INLINE ARRANGEMENT

PM DRN ENG DWG. NO.
 DATE 05/2019 SWST-APP-INL REV.

SPECIFICATIONS
 CONCRETE : CLASS 1/4 CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF CONSTRUCTION. REINFORCEMENT SHALL BE 60 REBAR WITH STEEL DESIGNATION AS TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
 REINFORCEMENT: REBAR SHALL BE 60 REBAR WITH STEEL DESIGNATION AS TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
 C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A8-78 CLASS 30.
 ENGINEERING DATA: STORMWATER INTERCEPTOR IS DESIGNED TO REGULATORY STANDARDS. NOMINAL TOTAL LIQUID CAPACITY AND OIL HOLDING CAPACITY AS INDICATED.
 STORMWATER INTERCEPTOR ARE UTILIZED FOR NON-POINT SOURCE POLLUTION ASSOCIATED WITH OIL AND SEDIMENT. THE INTERCEPTOR IS DESIGNED TO ALLOW FOR THE SETTLEMENT OF SOLIDS. THE INTERCEPTOR SHALL BE INSPECTED ON A REGULAR BASIS TO DETERMINE PROPER OPERATION AND CLEANING.

Stormwater Quality

KEYED NOTES

MARK QTY	DESCRIPTION
1	CONTROL WEIR FOR BY-PASS DIVERSION DURING HIGH FLOW
2	MANIFOLD PIPING
3	30" DIA DUCTILE IRON RING W/ COVER, H2O TRAFFIC DUTY
4	48" DIA RISER
5	CONCRETE EXTENSION RINGS TO GRADE
6	OSHA MANHOLE STEPS
7	OIL DAM PIPING
8	COALESCING MEDIA PACK
9	ALL JOINTS TO BE SEALED W/ PLASTIC FLEXIBLE GASKET
10	NAMEPLATE INDICATING: MFC: PARKUSA 888-611-PARK WWW.PARKUSA.COM MODEL: STORMTROOPER SWST SERIAL: #XXXXXX



- APPLICATIONS**
- COMMERCIAL
 - INDUSTRIAL
 - RESIDENTIAL
 - INSTITUTIONAL
 - REDEVELOPMENT
 - MPDES - MUNICIPAL/INDUSTRIAL
 - BMP STRUCTURAL SOLUTION

STORMTROOPER, U.S. PATENT 7,470,361
STORMWATER INTERCEPTOR SCHEDULE

MODEL NO.	TOTAL CAPACITY USGAL	TREATMENT PERFORMANCE				DIMENSIONS				
		FLOWRATE GPM	SOLIDS CFS	FT	USGAL	LENGTH L	WIDTH W	FLOWLINE HEIGHT H	PIPE SIZE P	
SWST-05	500	300	0.67	25	165	7'-10"	4'-4"	3'-3"	5'-3"	4"
SWST-06	600	400	0.89	36	198	7'-10"	4'-4"	3'-10"	5'-10"	4"
SWST-08	800	500	1.11	50	264	7'-10"	4'-4"	4'-0"	6'-0"	4"
SWST-10	1,000	650	1.45	60	460	9'-0"	6'-0"	4'-6"	6'-0"	4"
SWST-15	1,500	875	1.95	115	570	9'-0"	6'-0"	5'-6"	7'-0"	4"
SWST-20	2,000	1,125	2.51	130	1,080	13'-0"	6'-0"	6'-6"	8'-0"	6"
SWST-25	2,500	1,375	3.06	145	1,080	13'-0"	7'-0"	5'-6"	7'-0"	6"
SWST-30	3,000	1,600	3.56	215	1,080	13'-0"	7'-0"	6'-6"	8'-0"	6"
SWST-35	3,500	1,775	3.95	290	1,080	13'-0"	7'-0"	6'-10"	8'-4"	8"
SWST-40	4,000	1,950	4.34	225	1,680	16'-0"	8'-6"	5'-6"	7'-10"	8"
SWST-45	4,500	2,150	4.79	330	1,680	16'-0"	8'-6"	6'-0"	8'-0"	8"
SWST-50	5,000	2,350	5.23	340	1,680	16'-0"	8'-6"	6'-0"	8'-0"	8"
SWST-60	6,000	2,675	5.96	450	1,680	16'-0"	8'-6"	7'-6"	9'-0"	8"
SWST-70	7,000	3,000	6.68	500	2,375	18'-0"	9'-0"	7'-6"	9'-2"	10"
SWST-80	8,000	3,325	7.41	635	2,375	18'-0"	9'-0"	8'-6"	10'-0"	10"
SWST-90	9,000	3,625	8.07	770	2,375	18'-0"	9'-0"	9'-4"	10'-10"	10"
SWST-100	10,000	3,900	8.69	850	2,375	18'-0"	11'-2"	7'-2"	9'-6"	12"
SWST-110	11,000	4,175	9.30	910	3,490	21'-2"	11'-2"	8'-0"	9'-6"	12"
SWST-120	12,000	4,425	9.86	970	3,490	21'-2"	11'-2"	8'-6"	10'-0"	12"
SWST-130	13,000	4,725	10.52	1,070	3,740	21'-2"	11'-2"	9'-0"	10'-6"	14"
SWST-140	14,000	4,950	11.02	1,200	3,740	21'-2"	11'-2"	9'-8"	11'-2"	14"
SWST-150	15,000	5,200	11.58	1,335	3,740	21'-2"	11'-2"	10'-8"	12'-2"	14"

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION
*INCLUDES ADDITIONAL STRUCTURAL SUPPORT WALL



PROJECT:
 CUSTOMER:
 ENGINEER:
 ORDER #
 LOCATION:
 DATE:

PARKUSA
 www.parkusa.com 888-611-PARK
STORMWATER INTERCEPTOR
 SWALE BY-PASS ARRANGEMENT
 REV. 05/2019
 DWG. NO. SWST-APP-SBP

PARK STORM-TROOPER INTERCEPTOR
 THE STORM-TROOPER STORMWATER INTERCEPTOR IS DESIGNED TO RECEIVE & TREAT STORMWATER RUNOFF ON A GRAVITY-FLOW AND ONCE-THROUGH BASIS.

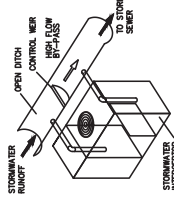
GUARANTEED PERFORMANCE
 PRE-ENGINEERED COALESCING MEDIA PACKS ARE UTILIZED FOR ENHANCED SEPARATION WHICH PROVIDE SUPERIOR PERFORMANCE COMPARED TO OTHER SEPARATORS WHICH UTILIZE BAFFLES OR DIVERTORS.

APPLICATIONS
 THE PARK STORM-TROOPER INTERCEPTOR IS DESIGNED FOR STORMWATER RUNOFF FROM COMMERCIAL & INDUSTRIAL APPLICATIONS WHERE EXCESSIVE POLLUTANTS MAY HARM THE ENVIRONMENT OR DAMAGE SEWER SYSTEMS.
BY-PASS DESIGN
 AN FULL SIZE BY-PASS DIVERTS STORMWATER DURING HEAVY PEAK STORM PERIODS. THIS ALLOWS FOR OPTIMAL INTERCEPTOR SIZING.

MAINTENANCE
 THE PARK STORM-TROOPER INTERCEPTOR REQUIRES MINIMAL MAINTENANCE. HYDROCARBONS AND SOLIDS ARE REMOVED FROM THE STORMWATER VIA BAFFLES AND COMPARTMENTS. FOR EXTRA-DUTY APPLICATIONS, THE COALESCING MEDIA PACK IS RECOMMENDED.

THESE POLLUTANTS ARE REMOVED FROM THE SEPARATOR WHEN SERVICED BY A LICENSED VACUUM TRUCK OPERATOR.

CALL US
 CONTACT OUR ENGINEERING DEPT. @ FOR SPECIFIC PERFORMANCE INFORMATION.



SPECIFICATIONS

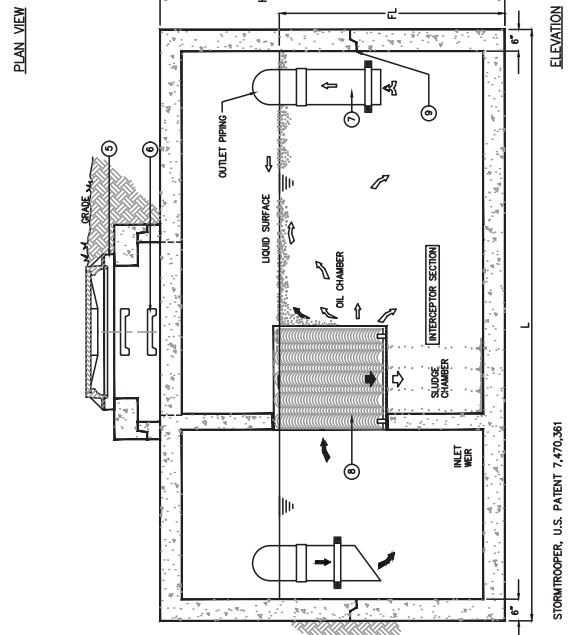
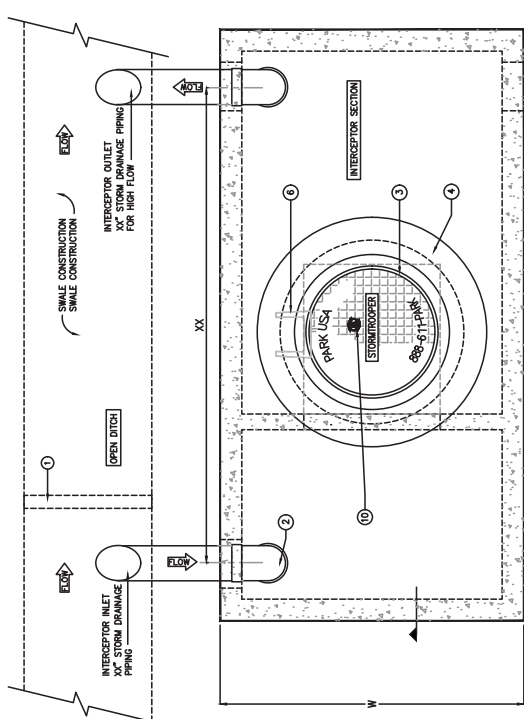
CONCRETE : CLASS 1/1 CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL #4 REBAR CONFORMING TO ASTM A615 ON REQUIRED LENGTHS OR EQUAL.

D.I. CASTINGS: MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED TO CONFORM WITH THE REQUIREMENTS OF ASTM A815 TO A818. ALL CASTINGS SHALL BE NOMINAL 24" DIAMETER AND BE TRAFFIC DUTY.

ENGINEERING DATA
 INTERCEPTOR IS STRUCTURALLY AND HYDRAULICALLY ENGINEERED CONFORMING TO REGULATORY STANDARDS. NOMINAL TOTAL LIQUID CAPACITY AND OIL HOLDING CAPACITY AS INDICATED.

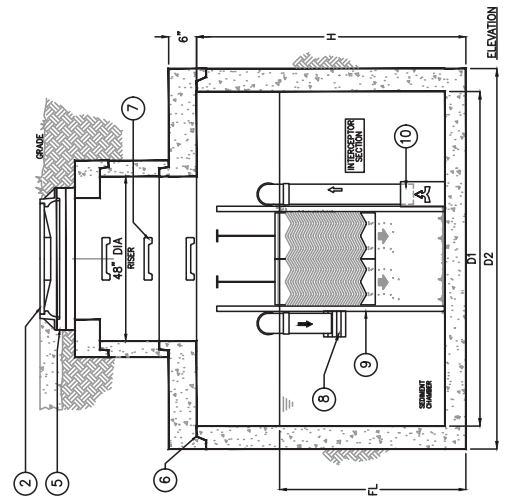
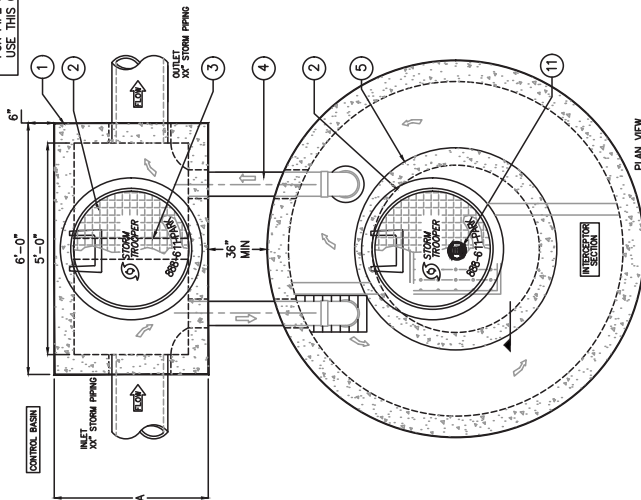
STORMWATER INTERCEPTOR ARE UTILIZED TO REDUCE NON-POINT SOURCE POLLUTION ASSOCIATED WITH OIL AND SEDIMENT. THE INTERCEPTOR IS DESIGNED TO ALLOW FOR THE DETAINMENT OF SETTLEABLE & FLOATABLE SOLIDS & LIQUIDS. THE INTERCEPTOR SHOULD BE INSPECTED ON A REGULAR BASIS TO DETERMINE PROPER OPERATION AND CLEANING.



STORMTROOPER, U.S. PATENT 7,470,361

MAX. CONTROL BASIN PIPE SIZE (IN)	WIDTH (A)
30"	4'-0"
36"	5'-0"
48"	6'-0"
60" PIPE SIZES OVER 24"	7'-0"

* FOR PIPE SIZES OVER 24" USE THIS CHART



GENERAL INFORMATION
PARK STORMTROOPER INTERCEPTOR THE STORMTROOPER STORMWATER INTERCEPTOR IS DESIGNED TO RECEIVE & TREAT STORMWATER RUNOFF ON A GRANTY-FLOW AND ONCE-THROUGH BASIS.

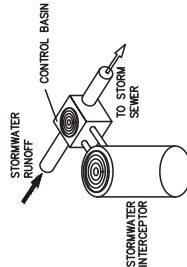
GUARANTEED PERFORMANCE
PRE-ENGINEERED COALESCING MEDIA PACKS WITH A 30% OVER-DESIGN FACTOR GUARANTEE THROUGHOUT SUPERIOR PERFORMANCE COMPARED TO OTHER SEPARATORS WHICH UTILIZE BAFFLES OR DIVERTERS.

APPLICATIONS
STORMTROOPER INTERCEPTOR IS DESIGNED FOR STORMWATER RUNOFF FROM COMMERCIAL & INDUSTRIAL APPLICATIONS WHERE EXCESSIVE POLLUTANTS MAY HARM THE ENVIRONMENT OR DAMAGE SEWER SYSTEMS.

BY-PASS DESIGN
THE CONTROL BASIN DIVERTS STORMWATER DURING PEAK STORM PERIODS. THE BASIN IS NOT FORMED AS PART OF THE INTERCEPTOR AND IS SPECIFIED BY THE USER. THIS ALLOWS FOR OPTIMAL INTERCEPTOR SIZING.

MAINTENANCE
STORMTROOPER INTERCEPTOR ONLY. THE PRECIPITATION MEDIA PACKS, HYDROCARBONS AND SOLIDS ARE REMOVED FROM THE STORMWATER VIA BAFFLES AND COMPARTMENTS. FOR EXTRA-DUTY APPLICATIONS, THE COALESCING MEDIA PACK IS RECOMMENDED.

THESE POLLUTANTS ARE REMOVED FROM THE STORMWATER BY A LICENSED VACUUM TRUCK OPERATOR.
CALL US
CONTACT OUR ENGINEERING DEPT. FOR SPECIFIC PERFORMANCE INFORMATION.



NAMEPLATE

- APPLICATIONS
 - INDUSTRIAL
 - COMMERCIAL
 - RESIDENTIAL
 - INSTITUTIONAL
 - REDEVELOPMENT
 - IMPVS - MUNICIPAL/INDUSTRIAL
 - BMP STRUCTURAL SOLUTION

MARK QTY	DESCRIPTION
1	CONTROL BASIN FOR BY-PASS
2	30" DIA. DUCTILE IRON RING
3	W/COVER, H2O TRAFFIC DUTY
4	BY-PASS WEIR W/ GALV. BERRIS SCREEN
5	MANIFOLD PIPING
6	CONCRETE EXTENSION RINGS AS RECD.
7	ALL JOINTS TO BE SEALED W/ POLYURETHANE GASKET
8	CAST IRON MANHOLE STEP 3 (AS RECD.)
9	DEFUSION BAFFLE
10	COALESCING MEDIA PACK
11	SLUDGE BAFFLE

NAMEPLATE INDICATING:
MFG: PARKUSA
WWW.PARKUSA.COM
MODEL: STORMTROOPER
DATE MANUFACTURED
SERIAL # XXXXXX

STORMTROOPER, U.S. PATENT 7,470,361

STORMTROOPER INTERCEPTOR SCHEDULE

MODEL NO.	TREATMENT PERFORMANCE		DIMENSIONS	
	FLOW RATE GPM	SOLIDS LBS/550L	DIAMETER (IN)	FLOWLINE HEIGHT (IN)
SWST-05C	300	40	28.0	45
SWST-06C	400	60	29.0	60
SWST-08C	500	1.11	30.0	72
SWST-10C	1,000	1.45	30.0	88
SWST-15C	1,500	1.95	30.0	98
SWST-20C	2,000	1.125	20.0	72
SWST-25C	2,500	1.375	20.0	84
SWST-30C	3,000	1.600	25.0	94
SWST-35C	3,500	1.775	35.0	104
SWST-40C	4,000	1.950	40.0	114
SWST-45C	4,500	2.150	45.0	124
SWST-50C	5,000	2.350	50.0	134
SWST-60C	6,000	2.675	60.0	144

OTHER SIZES & CONFIGURATIONS ARE AVAILABLE. CONTACT 800-236-8041 FOR MORE INFORMATION.



PROJECT: _____
 CUSTOMER: _____
 ENGINEER: _____
 ORDER # _____
 DATE: _____

PROJ. # _____
 LOCATION: _____

PARKUSA
 www.parkusa.com 888-611-PARK
 STORMWATER INTERCEPTOR
 STORMTROOPER MODEL SWST-05C THRU 60C
 DATE 05/2019
 REV. _____
 DWG. NO. SWST-C-01

SPECIFICATIONS

CONCRETE: CLASS I/A CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION. FLOOR AND RISER STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

D.I. CASTINGS: MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED OF DUCTILE IRON CONFORMING TO ASTM A536, AASHTO M306, & AASHTO M105 STANDARDS. MANHOLE SHALL BE NOMINAL 24" DIAMETER AND BE TRAFFIC DUTY.

ENGINEERING DATA
 INTERCEPTOR IS STRUCTURALLY AND HYDRAULICALLY ENGINEERED CONFORMING TO REGULATORY STANDARDS. NOMINAL TOTAL LIQUID CAPACITY AND OIL HOLDING CAPACITY AS INDICATED.
 STORMWATER INTERCEPTORS ARE UTILIZED TO REDUCE NON-POINT SOURCE POLLUTION ASSOCIATED WITH OIL AND SEDIMENT. THE INTERCEPTOR IS DESIGNED TO ALLOW FOR THE DETAINMENT OF SETTLEABLE & FLOATABLE SOLIDS & LIQUIDS. THE DETAINMENT OF SOLIDS IS BASED ON THE FOLLOWING REGULAR BASIS TO DETERMINE PROPER OPERATION AND CLEANING.

SPECIFICATIONS

CLASS I/A CONCRETE WITH DESIGN STRENGTH OF 4000 PSI. ALL CONCRETE SHALL BE CAST WITH REINFORCEMENT AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBARS CONFORMING TO ASTM A615. ALL REBARS ON REQUIRED CENTERS ON EQUAL.

C.I. CASTINGS: MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30. MANHOLE SHALL BE TRAFFIC DUTY.

ENGINEERING DATA AND HYDRAULICALLY ENGINEERED CONFORMING TO REGULATORY STANDARDS. NOMINAL TOTAL LIQUID CAPACITY AND OIL HOLDING CAPACITY AS INDICATED. FIELD EXCAVATION AND PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF INTERCEPTOR. USE DIMENSIONAL DATA AS SHOWN.

STORMWATER INTERCEPTOR ARE UTILIZED TO REDUCE NON-POINT SOURCE POLLUTION ASSOCIATED WITH OIL AND SEDIMENT. THE INTERCEPTOR IS DESIGNED TO ALLOW FOR THE DETAINMENT OF SOLIDS AND OILS. THE INTERCEPTOR SHALL BE INSPECTED ON A REGULAR BASIS TO DETERMINE PROPER OPERATION AND CLEANING.

- APPLICATIONS**
- MAINTENANCE WASHROOM & GARAGES
 - GOLF COURSES
 - EQUIPMENT & TRANSPORTATION WASHDOWN FACILITIES
 - CARWASHES
 - STORMWATER RUNOFF
 - SERVICE STATION FUEL DEPOSITS
 - MANUFACTURING FACILITY EFFLUENT WATER
 - REMEDIATION WATER CLEANUP
 - GENERAL INDUSTRY

Influent oily water contains oil droplets of many different sizes. These droplets rise at different rates. Park utilizes a statistical program that divides the droplets into ranges of sizes and calculates the rise rates of each range. This calculation determines which droplets the separator can capture.

MODEL NO.	W. (FT)	WIDTH (FT)	L. (FT)	LENGTH (FT)	D. (FT)	DEPTH (FT)	VOLUME (GAL)	Q (GPM)
HMI-100	5.0	5.0	8.0	8.0	5.0	1.496	126	
HMI-125	6.0	6.0	12.0	12.0	6.0	3,231	158	
HMI-150	6.0	6.0	12.0	12.0	7.5	4,039	190	
HMI-168	6.0	6.0	15.0	15.0	6.0	4,039	221	
HMI-173	7.5	7.5	15.0	15.0	7.0	5,891	253	
HMI-200	7.8	7.8	15.0	15.0	7.8	6,481	284	
HMI-225	7.5	7.5	15.0	15.0	9.0	7,574	316	
HMI-250	8.0	8.0	17.0	17.0	10.5	10,681	348	
HMI-275	8.0	8.0	17.0	17.0	10.5	10,681	379	
HMI-300	10.0	10.0	20.0	20.0	9.0	13,464	411	
HMI-325	10.0	10.0	20.0	20.0	9.8	14,586	442	
HMI-350	10.0	10.0	20.0	20.0	10.5	15,708	474	
HMI-375	10.0	10.0	20.0	20.0	11.3	16,830	506	
HMI-400	10.0	10.0	20.0	20.0	12.5	18,700	537	

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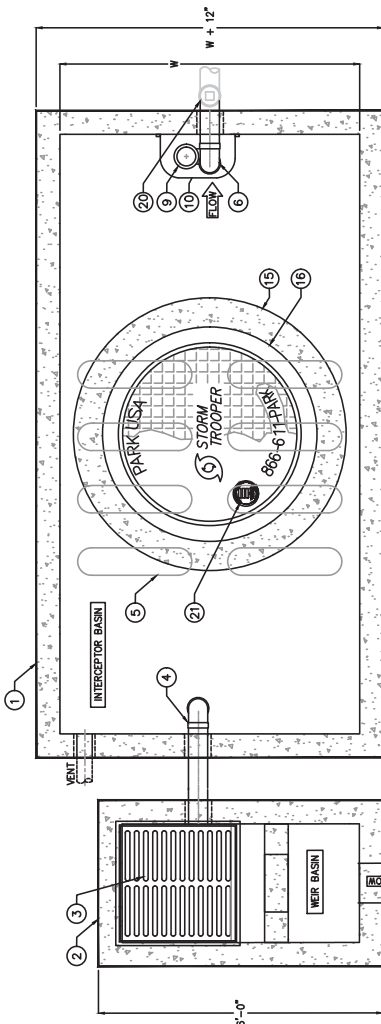
PROJECT:
 CUSTOMER:
 ENGINEER:
 ORDER # :
 DATE:

PROJ # :
 LOCATION:

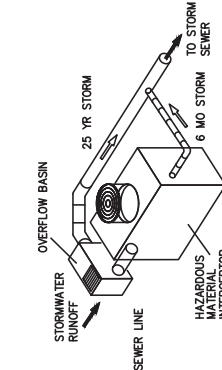


www.parkusa.com 888-611-PARK
 HAZARDOUS MATERIAL INTERCEPTOR
 STORMTROOPER MODELS HMI-100 THRU 400
 PM IPC DRN/ENG DWS. NO.
 DATE 02/2019 HMI-1
 REV.

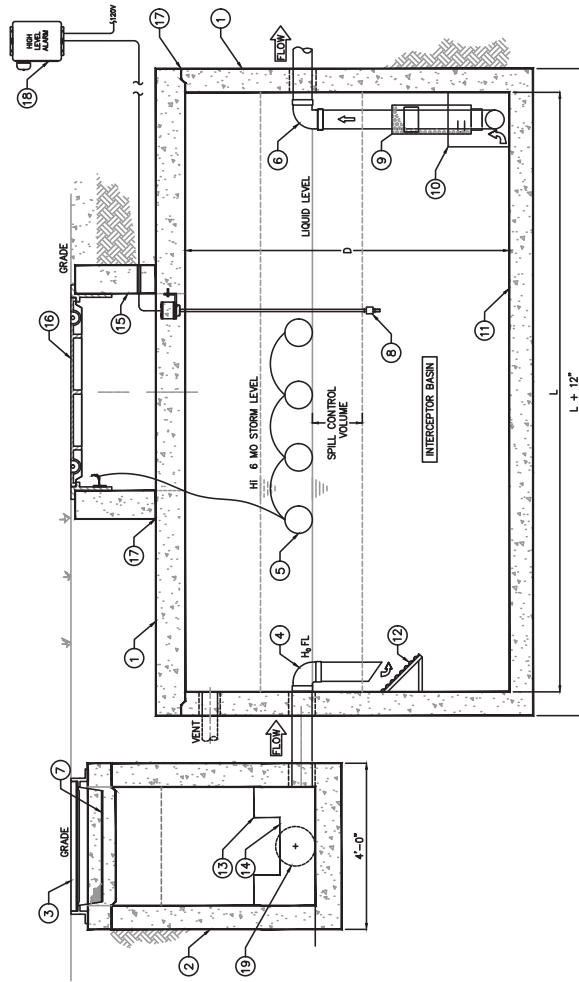
MARK QTY	KEYED NOTES
1	INTERCEPTOR BASIN
2	WEIR BASIN
3	INLET CAST IRON FRAME & GRATE, H-20 RATED
4	INLET PIPING
5	HYDROPHOBIC MEDIA
6	1 MONTH STORM OUTLET PIPE
7	REMOVABLE DEBRIS BASKET
8	STAINLESS STEEL
9	HIGH OIL FLOAT SWITCH
10	OUTLET STOP VALVE
11	OUTLET PIPE
12	AUTOMATIC INTERIOR LINER
13	25 YR STORM
14	OVERFLOW WEIR
15	STORM EVENT OVERFLOW WEIR
16	MANWAY EXTENSIONS AS REQ'D COVER, H-20 RATED
17	ALL JOINTS TO BE SEALED W/ PLASTIC FLEXIBLE GASKET
18	HIGH OIL ALARM PANEL MOUNTED AT REMOTE LOCATION
19	OVERFLOW PIPING
20	OUTLET PIPE CLEAN-OUT (BY OTHERS)
21	NAMEPLATE INDICATING: WFG, PARKUSA.COM TEL 888-611-PARK MODEL HMI-1 DATE MANUFACTURED



PLAN VIEW



Design Tip:
 The ParkUSA StormTrooper HMI is a patented stormwater wet vault specifically designed to accommodate fuel spills up to 250 gallons and intercept free oil, grease, TSS, debris and other pollutants found in stormwater. The system qualifies as a permanent best management practice (BMP) for EPA Stormwater Quality and 3CC management programs.

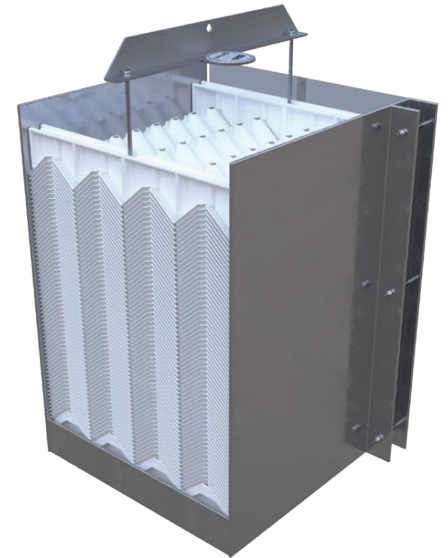


ELEVATION



Features

- Wide range of models and capacities available
- Customizable design to adapt to jobsite configuration
- Prepacked system for easy installation
- Oil removal through patented coalescing media
- Simple maintenance
- Coating options available for different environmental conditions
- Low and high flow capabilities



Stormwater Treatment

The StormTrooper[®] is the most advanced stormwater hydrodynamic separator (HDS) on the market. The StormTrooper[®] utilizes patented technology to remove sediments, trash, and oil from stormwater runoff. With thousands of installations worldwide, engineers rely on and include the StormTrooper[®] in their Stormwater Water Quality (SWQ) plan as required by EPA Clean Water Act.

Stormwater runoff from urban areas carries pollutants and trash into the storm drainage system. Unlike sanitary sewer water, stormwater typically receives little treatment. Polluted stormwater eventually drains into public waterways, rivers, aquifers, lakes, and oceans. The pollutants include trash, debris, sediment, and hydrocarbons which could be harmful to the environment, both biologically and aesthetically.



SW | STORMTROOPER
Standard



Normal Runoff Flow

Stormwater enters the StormTrooper through the control manhole with one or multiple inlets and/or a grate inlet. The inlet invert guides the treatment flow into the interceptor's first chamber where the water velocity is significantly reduced, creating non-turbulent conditions. Here, buoyant materials rise to the surface and heavy solids start to settle. As the water flows to the second compartment, it must travel through coalescent media where hydrodynamic coalescence occurs. During this laminar flow period, hydrocarbons separate and rise to the upper region of the interceptor. Sediment particles do the opposite, as they are separated and sink to the interceptor bottom region. All pollutants remain in these lower and upper regions, where they are securely detained until they are removed during maintenance. The water exits the interceptor to the control manhole's outlet compartment and then continues to the storm sewer.

High Runoff Flow

The StormTrooper has a flow limiter which ensures that the rated flow capacity is not exceeded through the interceptor. During high flow, runoff enters the control manhole where water builds and rises in the control manhole's inlet compartment. The excess runoff that does not flow into the interceptor will flow through a trash screen and over the bypass weir. In the control manhole's second compartment, the bypassed flow and the treated flow from the interceptor merges and then exits to the storm sewer.

How it Works

The function of the StormTrooper® system is to intercept free oils and sediments from stormwater runoff and retain them for periodic removal. Each system is designed for a rated flow rate capacity of stormwater, known as the initial "first-flush" flow of a storm event. This first-flush will contain the majority of the pollutants washed from the catchment areas. Runoff can range from low to very high flow rates. High flows can be detrimental to stormwater treatment devices in that excessive flows tend to scour and resuspend the existing retained pollutants left from the previous storm event. The StormTrooper® utilizes engineered bypass features to handle excessive flows, permitting only the design flow through the interceptor while bypassing high flows to the storm sewer.

Visit stormtrooper.parkusa.com for more information and design assistance.

To request a quote or catalog, visit request.parkusa.com.

APPLICATIONS



Good to use
in BMPs



Industrial



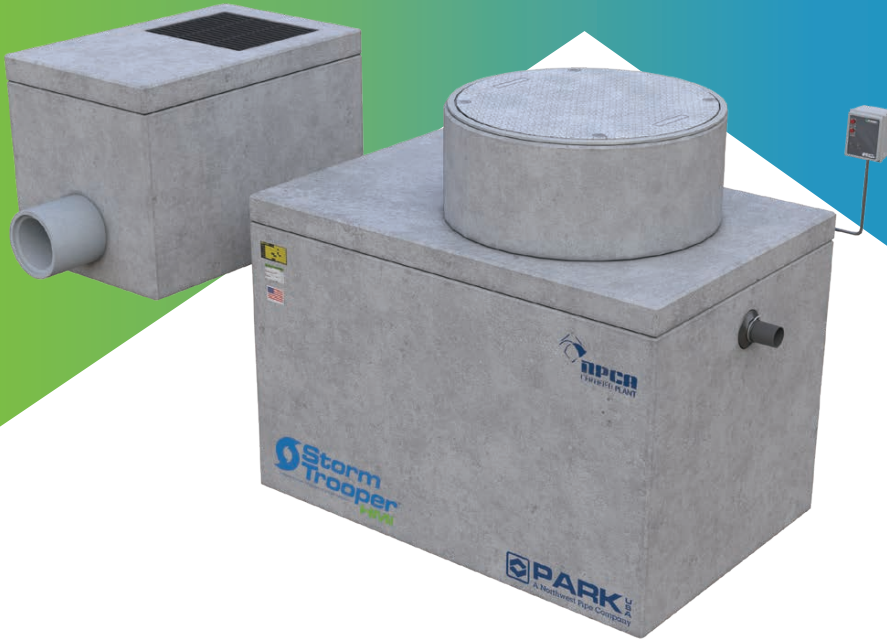
Parking Lots
Streets & Highways



Low Impact
Development



Green
Infrastructure



Features

- Best Value BMP
- Larger Effective Area (EA) Treatment
- Accommodates spills up to 3,800 gallons
- Includes diversion structure to bypass flows exceeding the design Water Quality Volume (WQv)
- Enhanced Gravity Separation utilizing CMP Technology
- Texas Manufactured
- Third Party Tested by SwRI

Stormwater Treatment

Sustainable management of water quality is imperative if future generations have access to clean water. Stormwater runoff collects pollutants like trash, debris, oil and gasoline and washes it directly into the stormwater drainage system.

At gasoline stations there is a great risk of pollutants being washed into the stormwater. A spill of only one gallon of gasoline can contaminate 750,000 gallons of water. Many municipalities require spill containment measures around gasoline fueling stations to address this. The City of Austin, Texas specifically requires that a business with a gasoline fueling station have a hazardous material interceptor with the ability to accommodate spills up to 750 gallons in addition to the ability to treat stormwater runoff.

The StormTrooper® HMI is part of the StormTrooper® product family of patented technology that is designed to intercept free oil, grease, TSS, debris and other pollutants found in stormwater. In addition, the HMI system can accommodate fuel spills up to 3,800 gallons.



SW | STORMTROOPER HMI
Standard

How it works

The function of the StormTrooper® system is to intercept free oils and sediments from stormwater runoff and retain them for periodic removal. Each system is designed for a rated flow rate capacity of stormwater, known as the initial “first-flush” flow of a storm event. This first-flush will contain the majority of the pollutants washed from the catchment areas. Runoff can range from low to very high flow rates. High flows can be detrimental to stormwater treatment devices in that excessive flows tend to scour and resuspend the existing retained pollutants left from the previous storm event. The StormTrooper® utilizes engineered bypass features to handle excessive flows, permitting only the design flow through the interceptor while bypassing high flows to the storm sewer.

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Visit hmi.parkusa.com for more information and design assistance.

StormTrooper® is protected by US Patents #7,470,361, 7,780,855 & Trademark Reg #2628121.



Model OSV

OilStop Valve is protected by US Patent #9,963,358

Peak WQq (cfs)	Spill Capacity (gal)	Total Volume (gal)	StormTrooper Model
0.282	750	1,500	HMI-100
0.352	1,600	3,200	HMI-125
0.422	2,000	4,000	HMI-150
0.493	3,000	5,900	HMI-175
0.563	3,200	6,400	HMI-200
0.634	3,800	7,600	HMI-225

Water Quality Flow is:

$$WQq = (qu) (A) (WQv)$$

$$WQv = Rv * i \text{ (inches)}$$

$$A = \text{area (impervious area in sq miles)}$$

$$qu = \text{unit peak discharge for NRCS Type III storm distribution}$$

$$Rv = \text{volumetric runoff coefficient} = (0.05 + (0.009 (\% \text{ impervious})))$$

$$i = \text{rainfall intensity}$$

Example: A 2.75 acre gas station, in Austin TX, with 0.75 acres drainage basin of 100 percent impervious cover needs a treatment device that will hold a minimum of 750 gallon fuel spill during dry conditions and the ability to treat the Water Quality Volume (WQv) for the drainage basin. The StormTrooper is sized using a flow rate. Using the above methodology converts the required Water Quality Volume to a discharge rate for sizing purposes. The calculated WQq of 0.33 cfs is the controlling factor for sizing the unit. The StormTrooper model HMI-125 is recommended.

Where:

$$i = (0.5 + ((A \text{ impervious} / A \text{ total}) - 0.2)) = 0.57 \text{ inches}^*$$

$$Rv = 0.05 + (0.009 * 80) = 0.77$$

$$WQv = 0.77 * 0.57 =$$

$$0.439 \text{ watershed inches}$$

$$qu = 677 \text{ cfs/mi}^2/\text{watershed inches}$$

$$WQq = (qu) (A) (WQv)$$

$$WQq = (677) (0.001172) (0.439)$$

$$= 0.33 \text{ cfs}$$

*25-8-213 (B) Water Quality Control Standard, City of Austin

APPLICATIONS



Good to use in BMPs



Fueling Depots



Industrial



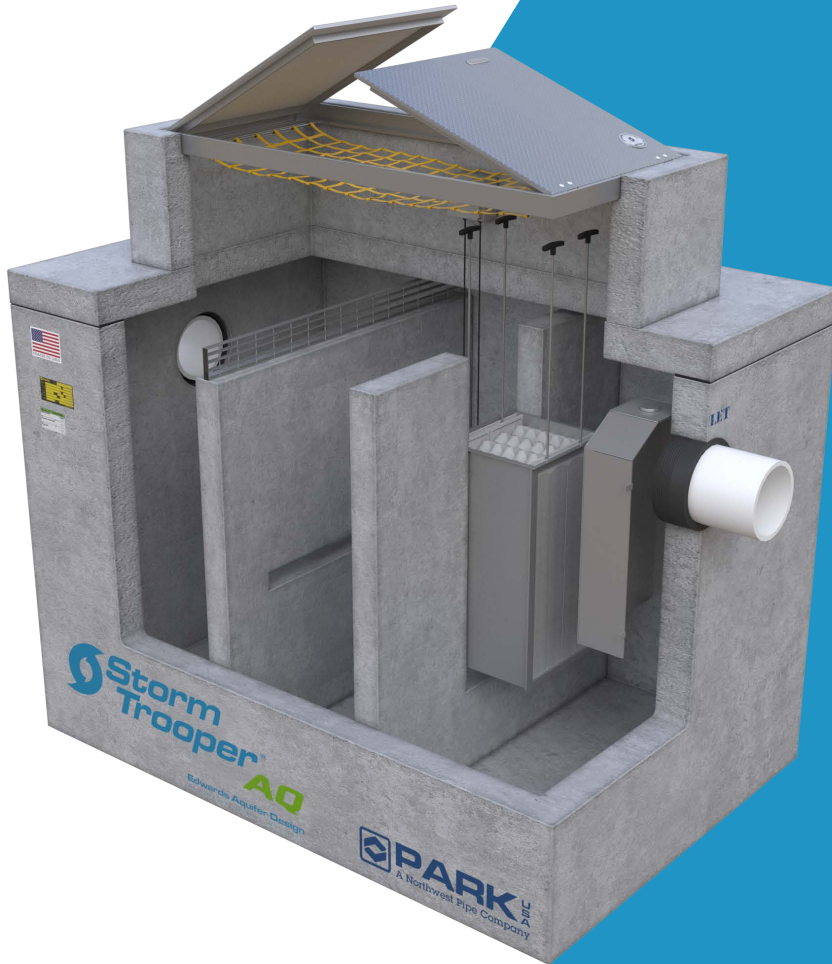
Parking Lots Streets & Highways



Low Impact Development



Green Infrastructure



PARK USA
A Northwest Pipe Company

**ENGINEERING
FACTS**

GENERAL INFORMATION

The ParkUSA Stormtrooper Model SWAQ is a patented stormwater quality system specifically designed for sensitive environments. It removes sediments and oil from stormwater runoff. The SWAQ was originally designed for the Edwards Aquifer, meeting all requirements for this sensitive aquifer recharge zones. The unit consists of a separator with internal flow control.

The Edwards Aquifer, located in South Central Texas, is one of the greatest natural resources of artesian aquifers in the world. It serves as the primary source of water for over two million people. Because the aquifer is highly permeable and has rapid recharge and discharge, the aquifer produces large quantities of water. However, this phenomenon makes the aquifer highly vulnerable to contamination where it is exposed at the surface in the recharge zone.

Sustainable management of water quality is imperative if future generations hope to enjoy this natural resource. Stormwater runoff collects pollutants like trash, debris and oil dumping them directly into the stormwater drainage system. Until recently, stormwater runoff was left untreated with no protection from pollutants entering the aquifer, public waterways, streams, rivers and lakes.

The StormTrooper® AQ is a patented stormwater wet vault specifically designed to intercept free oils, grease, TSS, debris and other pollutants found in stormwater runoff. StormTrooper AQ features “Enhanced” Gravity Separation which is technology utilizing coalescing media plates engineered to a performance prediction based on Stoke’s Law. This cutting-edge technology is now available for use to protect the Edwards Aquifer for future generations.

OPERATION

Untreated storm water enters the “Grit Chamber” on the inlet side of the StormTrooper AQ. Larger particles, as well as semi buoyant material, are captured in this chamber to prevent excessive clogging and obstruction of the frontal area of the coalescing media plates. This process also reduces the potential for short circuiting and higher velocities through the plates. The “diffusion baffle,” which separates the two chambers, works to perform two vital functions. First, it distributes flow evenly through the entire cross-section of the unit allowing for a more uniform delivery of pollutants through the plate. Next, a water quality orifice regulates flow through the plates and lower section of unit to prevent re-suspension of pollutants. Each StormTrooper has a specific maximum flow rate that has been pre-calibrated. Higher flow rates by-pass the system once the pre-calibrated flow rates are exceeded.

Coalescing Media Plates: A submerged oil/floatable baffle is located around the effluent pipe to allow for the capture and containment of these pollutants. Collected pollutants will remain in the interceptor until removal. Because no filter cartridges are required operating costs are minimal. Furthermore, the StormTrooper AQ System has no moving parts substantially reducing maintenance costs. As stormwater pollutants travel through the CMP (coalescing media plate pack) oil rises to the top and solids drop to the bottom through dedicated surfaces and weep holes. Plate supports at the bottom allow for easy removal of the solids that collect beneath the plates. Because of the steep angles and short travel distances, oils and solids are quickly released eventually floating to the surface of the StormTrooper unit or settling to the bottom of the unit.

FEATURES

- Best Value BMP
- Larger Effective Area (EA) Treatment
- Low Profile Design
- LEED Compliant
- Enhanced Gravity Separation Utilizing CMP Technology
- Texas Manufactured
- Third Party Tested by SwRI

The ParkUSA Stormtrooper Model SWAQ is a patented stormwater quality system specifically designed for sensitive environments. It removes sediments and oil from stormwater runoff. The SWAQ was originally designed for the Edwards Aquifer, meeting all requirements for this sensitive aquifer recharge zones. The unit consists of a separator with internal flow control.

SYSTEM COMPONENTS

The StormTrooper AQ shall consist of a control manhole connected to a separator unit to remove debris (TSS) and hydrocarbons from stormwater.

The Separator Unit, shall be connected to the control manhole by means of a flexible resilient rubber boot [mortar joint]. The unit shall maintain a minimum separation of 36 inches between the Control Manhole and the Separator Unit.

The Separator Unit shall contain a prefabricated corrugated plate for intermittent and variable flows of water, oil, or any combination of non-emulsified oil-water mixtures ranging from zero-flow up to 100 percent of the maximum hydraulic capacity. This will allow the separator unit to maintain an acceptable water effluent.

DESIGN CONSIDERATIONS

As a flow-based BMP, the StormTrooper is designed using the treatment flow rate for the site, as calculated using the Rational Method. The runoff rate from the tributary area is calculated using Equation 3.4:

$$Q = CIA$$

Where:

Q = flow rate (ft³/s)

C = runoff coefficient for the tributary area

I = design rainfall intensity (1.1 in/hr)

A = drainage area (ac)

The runoff coefficient is calculated as the weighted average of the impervious and pervious areas. Runoff coefficient for impervious areas is assumed to be 0.90 and the runoff coefficient for pervious areas is assumed to be 0.03.

The overflow rate (hydraulic loading rate) is calculated using Equation 3.5:

$$VOR = Q/A$$

Where:

VOR = overflow rate (ft/s)

Q = runoff rate calculated with Equation 3.4 (ft³/s)

A = surface Area of Unit (ft²)

The overflow rate can then be used with the table to determine the StormTrooper unit that provides the desired TSS removal.

The StormTrooper system is available in several models. The table below summarizes the various unit models and their corresponding dimensions.

The characteristics of the catchment area are defined as Effective Area (EA). The Effective Area is the number of acres draining to a single treatment unit and is calculated using the following equation:

$$EA = (A_i * 0.9) + (A_p * 0.03)$$

Where:

EA = Effective Area (ac)

A_i = Impervious Area (ac)

A_p = Pervious Area (ac)

StormTrooper models can be selected from the table below that will achieve an 80 percent TSS reduction at the corresponding Effective Areas shown. The StormTrooper® SWAQ system for the Edwards Aquifer is designed using the overflow rates. These were calculated based on the surface area of the vault alone and a rainfall intensity of 1.1 in/hr.

MAINTENANCE

A preventative maintenance cleanout schedule is the most valuable tool for maintaining the proper operation of StormTrooper. Separator maintenance costs will be greatly reduced if a good housekeeping plan for the property is developed i.e., trash pickup, lawn maintenance, dumpster control, etc.

StormTrooper separators have no moving parts and no filter cartridges. The manufacturer recommends quarterly ongoing inspections for accumulated pollutants. Pollutant deposition may vary from year to year. Quarterly inspections ensure that the system is serviced at the appropriate times. Professional vacuum services should be considered when capacities exceed these recommended levels.

It is very useful to keep a record of each inspection; therefore, an inspection and maintenance form has been attached for your use.

Inspection Procedures

1. Easiest observation and maintenance is best accomplished during non-flow (dry weather) conditions three to four days after the most recent rain.
2. Remove interceptor covers or open hatchway to observe conditions. Remove hatchway safety net ("EnterNet"). Observe for trash and debris and remove if necessary. This is the most important maintenance requirement. If absorbent pillows are utilized, observe their condition. Uniform browning or gray color of the pillow means they should be replaced. Observe baffle debris screen and clean if necessary.
3. Coalescing plates are self-cleaning and seldom require maintenance unless damaged. Do not walk on or stand on plate packs.
4. Check of the depth (level) of oil and sediment with a tank sampler device designed for this purpose.

SIZING

In the below Table, the current model and sizes for the StormTrooper AQ are showed.

MODEL	FLOW RATE GPM	TOTAL SURFACE AREA SQ FT	DIMENSIONS OUTSIDE			MAX EFFECTIVE AREA ACRES
			LENGTH	WIDTH	HEIGHT	
SWAQ- 05	420	100	7'-10"	4'-4"	7'-0"	0.13
SWAQ- 10	600	149	8'-8"	5'-0"	7'-0"	0.20
SWAQ- 20	100	248	11'-0"	6'-0"	7'-6"	0.33
SWAQ- 25	1,440	369	13'-0"	7'-0"	8'-0"	0.50
SWAQ- 40	2,250	588	16'-0"	8'-6"	8'-0"	0.79
SWAQ- 70	2,720	730	18'-0"	9'-0"	6'-10"	0.98
SWAQ- 110	4,000	913	21'-2"	11'-2"	6'-10"	1.23

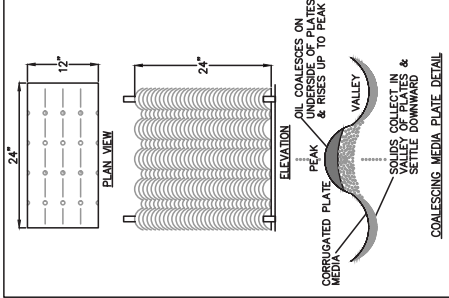


GENERAL INFORMATION
STORMWATER INTERCEPTORS ARE UTILIZED TO REDUCE NON-POINT SOURCE POLLUTION ASSOCIATED WITH OIL AND SEDIMENT. THE INTERCEPTOR IS DESIGNED TO ALLOW FOR THE DETAINMENT OF SETTLEABLE & FLOATABLE SOLIDS & LIQUIDS.

GUARANTEED PERFORMANCE
PRE-ENGINEERED COALESCING MEDIA PACKS ARE UTILIZED FOR ENHANCED SEPARATION WHICH PROVIDE SUPERIOR PERFORMANCE COMPARED TO OTHER SEPARATORS WHICH UTILIZE BAFFLES OR DIVERTERS.

MAINTENANCE
THE INTERCEPTOR SHOULD BE INSPECTED ON A REGULAR BASIS TO DETERMINE PROPER OPERATION AND CLEANING. THE STORMTROOPER HAS BECOME KNOWN IN THE INDUSTRY AS THE "EASIEST TO MAINTAIN." HATCHWAY DESIGN MAKES INSPECTION AND VAULT ENTRY ACCESSIBLE FOR MAINTENANCE.

ALL COMPARTMENTS ALLOW FOR THE LARGER HOSE ASSOCIATED WITH VACTOR TRUCK PUMP OUT. MAINTENANCE INSTRUCTIONS AND LOGS ARE AVAILABLE FROM PARK ENGINEERING.



COALESCING MEDIA PLATE OPERATION
THE COALESCING MEDIA PACKS CONSIST OF CLOSELY SPACED CORRUGATED PLATES. THE PAINTED PLATES ARE AN OIL ATTRACTING MATERIAL. THE PAINTED PLATES ARE AN INNOVATIVE DESIGN. THE PAINTED PLATES UTILIZE A SINUSOIDAL LAMINAR FLOW OF THE OIL WATER MIXTURE. THE OIL DROPLETS TO INDIVIDUALLY ADHERE TO THE PLATES. OIL DROPLETS TEND TO COALESCE TOGETHER AS THEY PASS THROUGH THE COALESCING MEDIA. PROMOTES A HIGH INCIDENCE OF DROPLET COLLISION AS THE DOWNWARD PATH TO A VERTICAL PATH. THE COALESCING OIL DROPLETS SETTLE DOWNWARD. THE COALESCING MEDIA PLATES OR OUTLETS IN THE COALESCING MEDIA PACK.

MARK	QTY	DESCRIPTION
1	1	36" X 36" GALV. STEEL FRAME & COVER, RATED FOR H2O TRAFFIC LOADING W/ SAFETY NET (CAST IN OR LOOSE)
2	1	DUCTILE IRON RING/COVER
3	1	GALV. STEEL TRASH SCREEN
4	1	WATER QUALITY ORIFICE
5	-	BITUMASTIC EXTERIOR COATING
6	1	CONTROL BAFFLE
7	1	EFFLUENT BAFFLE W/ ANTI-SIPHON
8	1	COALESCING MEDIA PACK (SEE DETAIL)
9	1	MONOLITHIC BAFFLE
10	-	NAMEPLATE: MFG: PARKUSA 888-611-PARK WWW.PARKUSA.COM MODEL: SWAQ-XX DATE MANUFACTURED



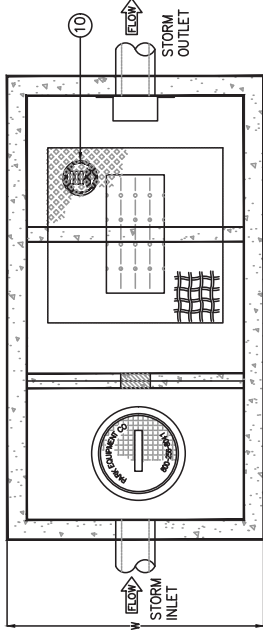
MODEL NO.	FLOW RATE (gpm)	TOTAL SURFACE AREA (SQ FT)	MAX EFFECTIVE DRAINAGE (ACRES)	DIMENSIONS		
				LENGTH L	WIDTH W	HEIGHT H
SWAQ-05	420	100	0.13	7'-10"	4'-4"	7'-0"
SWAQ-10	600	149	0.20	8'-8"	5'-0"	7'-0"
SWAQ-20	1000	248	0.33	11'-0"	6'-0"	7'-6"
SWAQ-25	1440	369	0.50	13'-0"	7'-0"	8'-0"
SWAQ-40	2250	588	0.79	16'-0"	8'-6"	8'-0"
SWAQ-70	2700	730	0.98	18'-0"	9'-0"	6'-10"
SWAQ-110	4000	913	1.23	21'-2"	11'-2"	6'-10"

L-DWMS
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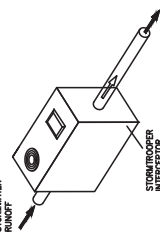
PROJECT: _____
CUSTOMER: _____
ENGINEER: _____
ORDER #: _____ PROJ. #: _____
DATE: _____ LOCATION: _____

PARK
www.parkusa.com 888-611-PARK
STORMWATER INTERCEPTOR
MODEL SWAQ 05 THRU 110
DATE 05/2019 SWAQ-1
REV. _____

Storm Trooper
Edwards Aquifer Design
STORMWATER QUALITY SERVICES
STORMTROOPER, U.S. PATENT 7,470,361

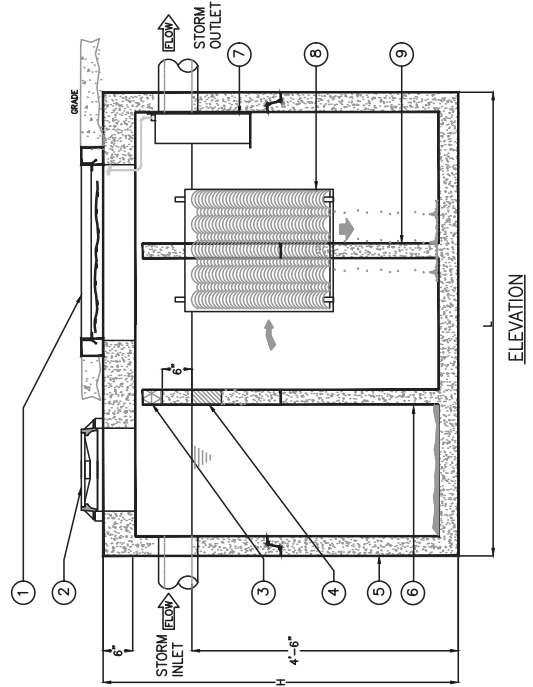


PLAN VIEW



SPECIFICATIONS

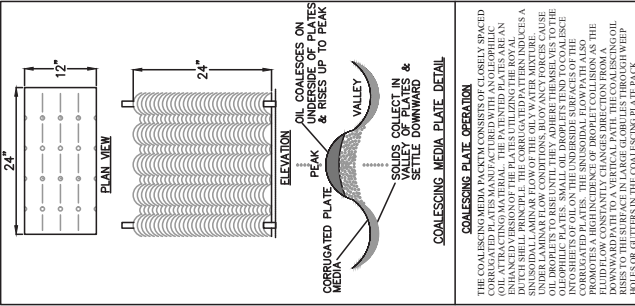
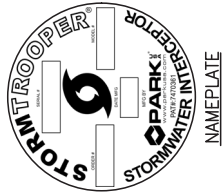
- CONCRETE : CLASS 1/11 CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.
- REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL #4 REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- D.I. CASTINGS: MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED OF DUCTILE IRON CONFORMING TO ASTM A536, AASHTO M306, & AASHTO M103 STANDARDS. MANHOLE SHALL BE NOMINAL 24" DIAMETER AND BE TRAFFIC DUTY.
- HATCHWAYS: GALVANIZED STEEL SKID-RESISTANT DOUBLE LEAF H-20 RATED.
- ENGINEERING DATA INTERCEPTOR IS STRUCTURALLY AND HYDRAULICALLY ENGINEERED CONFORMING TO UNIFORM PLUMBING CODE. NOMINAL CAPACITY AS INDICATED. FIELD EXCAVATION AND PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF INTERCEPTOR. USE DIMENSIONAL DATA AS SHOWN.



ELEVATION

Stormwater
Quality

KEYED NOTES	
MARK QTY	DESCRIPTION
1	4 BOOTS
2	2 PVC GALV. STEEL FRAME & COVER, RATED FOR TRAFFIC LOADING (CAST IN OR LOOSE) W/ SAFETY NET
3	1 20" CAST IRON RING AND COVER
4	1 GALV. STEEL TRASH SCREEN
5	1 WATER QUALITY ORIFICE COATING
6	1 BITUMASTIC EXTERIOR COATING
7	1 CONTROL BAFFLE
8	1 MONOLITHIC BAFFLE
9	1 COALESCING MEDIA PACK
10	1 EFFLUENT BAFFLE W/ ANTI-SIPHON
11	1 NAMEPLATE
12	MFG: PARKUSA 888-611-PARK WWW.PARKUSA.COM MODEL: SWAQ-BP-XX DATE MANUFACTURED



GENERAL INFORMATION
THE STORMTROOPER® AD STORMWATER INTERCEPTOR IS DESIGNED TO RECEIVE & TREAT STORMWATER RUNOFF ON A GRAVITY-FLOW AND ONCE-THROUGH

GUARANTEED PERFORMANCE
PRE-ENGINEERED COALESCING MEDIA PACKS ARE UTILIZED FOR ENHANCED SEPARATION WHICH PROVIDE SUPERIOR PERFORMANCE COMPARED TO OTHER SEPARATORS WHICH UTILIZE BAFFLES OR DIVERTERS.

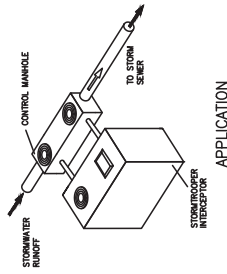
APPLICATIONS
THE PARKUSA STORMTROOPER INTERCEPTOR IS DESIGNED FOR STORMWATER RUNOFF FROM COMMERCIAL & INDUSTRIAL APPLICATIONS WHERE EXCESSIVE POLLUTANTS MAY HARM THE ENVIRONMENT OR DAMAGE SEWER SYSTEMS.

BY-PASS DESIGN
A BY-PASS MANHOLE DIVERTS STORMWATER DURING HEAVY PEAK STORM PERIODS. THIS ALLOWS FOR OPTIMAL INTERCEPTOR SIZING.

MAINTENANCE
THE PARK STORMTROOPER INTERCEPTOR REQUIRES MINIMAL MAINTENANCE. HYDROCARBONS AND SOLIDS ARE REMOVED FROM THE STORMWATER VIA BAFFLES AND COALESCING MEDIA.

THESE POLLUTANTS ARE REMOVED FROM THE STORMWATER THROUGH THE BY-PASS MANHOLE OPERATED BY A LICENSED JACOUM TRUCK OPERATOR.

USE SWAQ-BYPASS IF DESIGN FLOW EXCEEDS FLOW RATE SHOWN IN SCHEDULE



SPECIFICATIONS

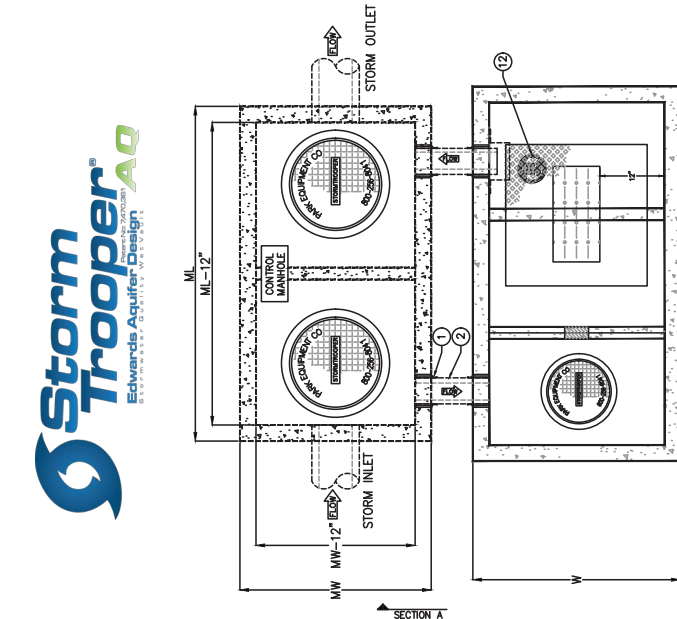
CONCRETE : CLASS I/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

ACCESS: MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30. MANHOLE SHALL HAVE 30 INCH INSIDE DIAMETER AND BE TRAFFIC DUTY.

HATCHWAYS: GALVANIZED STEEL SKID-RESISTANT DOUBLE LEAF H-20 RATED.

ENGINEERING DATA
INTERCEPTOR IS STRUCTURALLY AND HYDRAULICALLY ENGINEERED CONFORMING TO REGULATORY STANDARDS. NOMINAL CAPACITY AS INDICATED. FIELD EXCAVATION AND PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF INTERCEPTOR. USE DIMENSIONAL DATA AS SHOWN.



MODEL NO.	FLOW RATE (gpm)	TOTAL SURFACE AREA (SQ FT)	MAX SURFACE EFFECTIVE DRAINAGE (ACRES)	DIMENSIONS			CONTROL MANHOLE HEIGHT (IN)	CONTROL MANHOLE LENGTH (IN)	CONTROL MANHOLE WIDTH (IN)
				LENGTH L	WIDTH W	HEIGHT H			
SWAQ-BP-05	420	100	0.13	7'-10"	4'-4"	7'-0"	4'-0"	4'-0"	4'-0"
SWAQ-BP-10	600	149	0.20	8'-8"	5'-0"	7'-0"	4'-0"	4'-0"	4'-0"
SWAQ-BP-20	1000	248	0.33	11'-0"	6'-0"	7'-6"	4'-0"	11'-0"	4'-0"
SWAQ-BP-25	1440	369	0.50	13'-0"	7'-0"	8'-0"	4'-0"	11'-0"	4'-0"
SWAQ-BP-40	2250	588	0.79	16'-0"	8'-6"	8'-0"	4'-0"	16'-0"	4'-0"
SWAQ-BP-70	2720	730	0.98	18'-0"	9'-0"	6'-10"	4'-0"	16'-0"	4'-0"
SWAQ-BP-110	4000	913	1.23	21'-2"	11'-2"	6'-10"	4'-0"	16'-0"	4'-0"

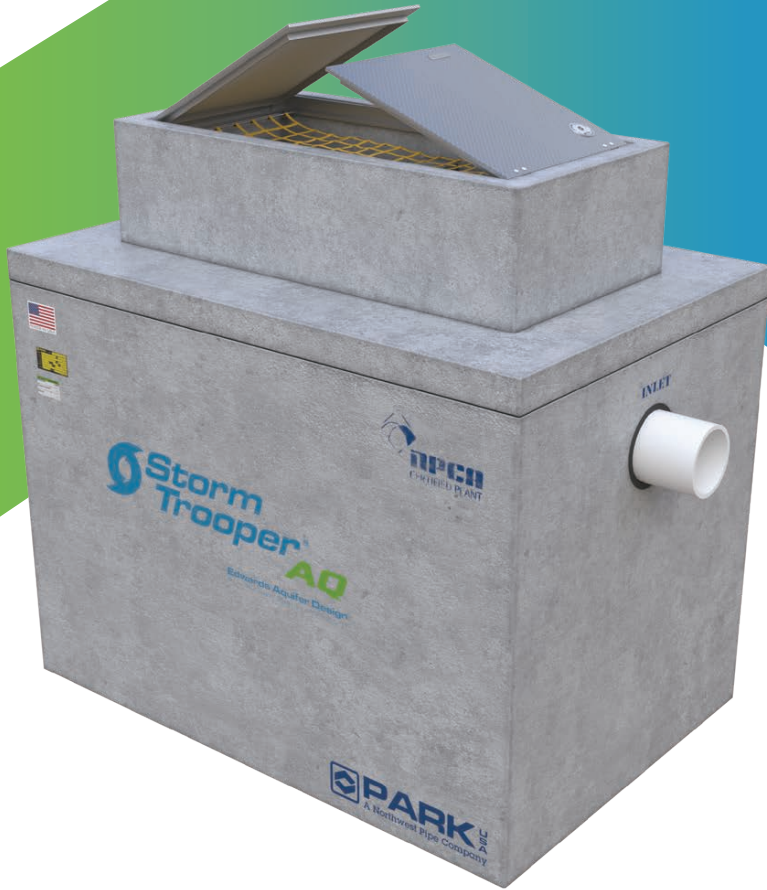
STORMTROOPER, U.S. PATENT 7,470,361



PROJECT :
CUSTOMER :
ENGINEER :
ORDER # :
DATE :
PROJ # :
LOCATION :



www.parkusa.com 888-611-PARK
STORMWATER INTERCEPTOR
SWAQ WITH BYPASS
REV. DATE 01/2019 SWAQ-BP-01



Features

- Valuable best management practice (BMP)
- Larger effective area (EA) Treatment
- Low profile design
- LEED Compliant
- Enhanced gravity separation, utilizing CMP technology
- Manufactured in Texas
- Third Party tested by Southwest Research Institute (SwRI)

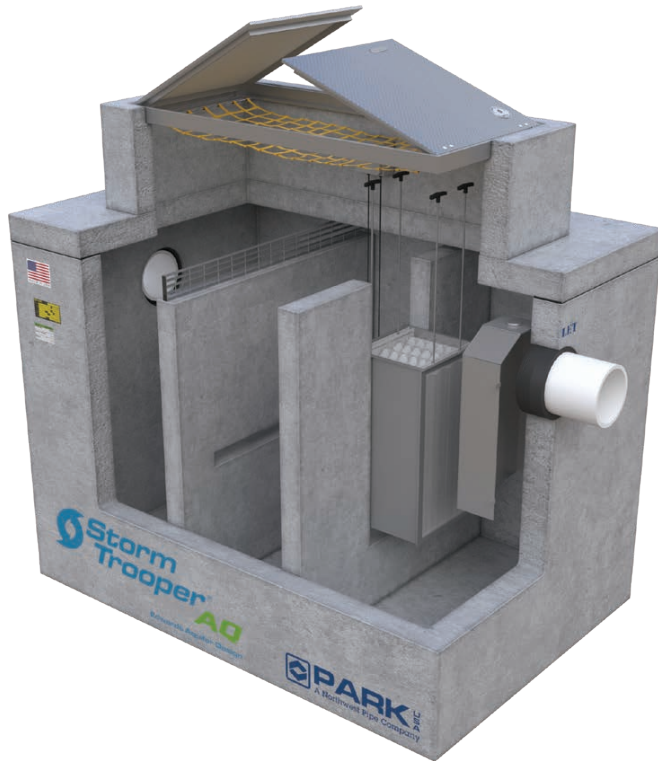
Stormwater Treatment

The ParkUSA® StormTrooper® Model SWAQ is a patented stormwater quality system specifically designed for sensitive environments. It removes sediments and oil from stormwater runoff. The SWAQ was originally designed for the Edwards Aquifer, meeting all requirements for this sensitive aquifer's recharge zone. The unit consists of a separator with internal flow control.

The StormTrooper® AQ is a patented stormwater wet vault specifically designed to intercept free oils, grease, total suspended sediments (TSS), debris, and other pollutants found in stormwater runoff. The StormTrooper® AQ features enhanced gravity separation technology, which utilizes coalescing media plates (CMP) engineered to a performance prediction based on Stokes's Law. This cutting-edge technology is now available for use to protect the Edwards Aquifer and other sensitive watersheds for future generations.



SW | STORMTROOPER AQ
Standard



How it Works

Untreated storm water enters the “Grit Chamber” on the inlet side of the StormTrooper® AQ. Larger particles, as well as semi buoyant material, are captured in this chamber to prevent excessive clogging and obstruction of the frontal area of the coalescing media plates. This process also reduces the potential for short circuiting and higher velocities through the plates. The “diffusion baffle,” which separates the two chambers, works to perform two vital functions. First, it distributes flow evenly through the entire cross-section of the unit allowing for a more uniform delivery of pollutants through the plate. Next, a water quality orifice regulates flow through the plates and the lower section of unit to prevent re-suspension of pollutants. Each StormTrooper® AQ has a specific maximum flow rate that has been pre-calibrated. Higher flow rates by-pass the system once the pre-calibrated flow rate is exceeded.

Coalescing Media Plates (CMP): A submerged oil/floatable baffle is located around the effluent pipe to allow for the capture and containment of these pollutants. Collected pollutants will remain in the interceptor until removal. Because no filter cartridges are required operating costs are minimal. Furthermore, the StormTrooper® AQ System has no moving parts substantially reducing maintenance costs. As stormwater pollutants travel through the CMP pack, oil rises to the top and solids drop to the bottom through dedicated surfaces and weep holes. Plate supports at the bottom allow for easy removal of the solids that collect beneath the plates. Because of the steep angles and short travel distances, oils and solids are quickly released from the plates, oil eventually floating to the surface of the StormTrooper® unit and solids settling to the bottom of the unit.

Visit stormtrooperaq.parkusa.com for more information and design assistance.

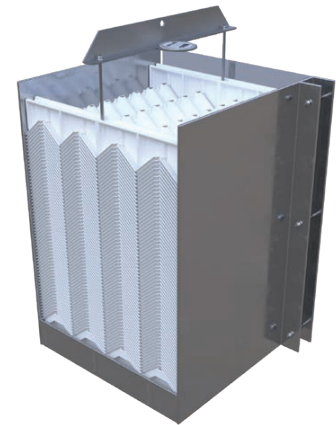
To request a quote or catalog, visit request.parkusa.com.

System Components

The StormTrooper® AQ consists of a control manhole connected to a separator unit to remove debris (TSS) and hydrocarbons from stormwater. The separator unit, is connected to the control manhole by means of a flexible resilient rubber boot (mortar joint). The unit maintains a minimum separation of 36 inches between the Control Manhole and the Separator Unit.

The separator unit contains standard prefabricated inclined parallel corrugated plate for intermittent and variable flows of water, oil or any combination of non-emulsified oil-water mixtures ranging from zero-flow up to one hundred percent of the maximum hydraulic capacity. This will allow the separator unit to maintain an acceptable water effluent.

StormTrooper® is protected by US Patents #7,470,361, 7,780,855 & Trademark Reg #2628121.



Coalescing Media Plates

As stormwater pollutants travel through the CMP (coalescing media plate pack) oil rises to the top and solids drop to the bottom through dedicated surfaces and weep holes. Plate supports at the bottom allow for easy removal of the solids that collect beneath the plates. Because of the steep angles and short travel distances, oils and solids are quickly released, eventually floating to the surface of the unit or settling to the bottom.

APPLICATIONS



Good to use
in BMPs



Parking Lots
Streets & Highways



Low Impact
Development



Industrial



Green
Infrastructure

Trash Trooper[®]



PARK
USA
A Northwest Pipe Company

ENGINEERING FACTS

GENERAL INFORMATION

The increasing presence of trash debris in our waterways is harmful to aquatic habitats and animal wildlife. ParkUSA's TrashTrooper® products are screening systems designed to collect and contain a wide variety of floatable pollution. TrashTroopers can serve as an effective Post-Construction Best Management Practice (BMP), which limits the quantity of harmful pollutants being discharged from developed properties during and following rain events. While the best method for addressing floatables in waterways is through public education ("don't litter" campaigns, signage, inlet markers, etc.), floatable collection products will separate a large percentage of floating trash and debris from stormwater.

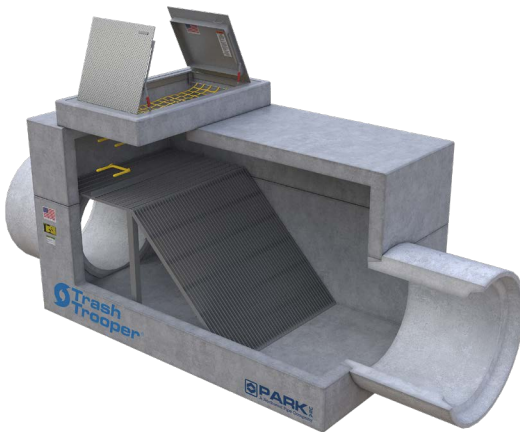
MODELS



Pond Inlet Filter



Floatable Collection Device



Trashtrooper

There are various configurations and sizes available for the ParkUSA TrashTrooper to fit any application. Floatable Collection devices and Pond Inlet Filters are also available.

FEATURES

- Various Bar Screen Designs
- Low Profile Design
- LEED Compliant
- Texas Manufactured
- Easy Installation and Maintenance

The increasing presence of trash debris in our waterways is harmful to aquatic habitats and animal wildlife. ParkUSA's TrashTrooper® is a product of inline screening systems designed to collect and contain a wide variety of floatable pollution.

SYSTEM COMPONENTS

The TrashTrooper is designed with the following components:

- Bar Screens
- Heavy-Duty Galvanized Steel Collection Screens
- Inlet Debris Screens and Pollution Inserts
- Concrete Vault, and Piping when needed.
- Access Hatchways
- Ladder

OPERATION

ParkUSA's TrashTrooper captures unwanted floatable pollutants from stormwater systems. Inside of the interceptor the influent will encounter a floatable collection bar screen that traps floating debris as small as 1 ½ inch in size, preventing them from invading municipal MS4s, rivers, drainage swales, lakes, bayous, estuaries, and coastal waters. The separated effluent will exit the TrashTrooper and continue through the stormwater sewer system, leaving behind the debris in the product.

DESIGN CONSIDERATIONS

Proper design starts with the consulting city, county, state, or national EPA stormwater quality and flood control regulations for minimum structural BMP requirements for floatable collection systems.

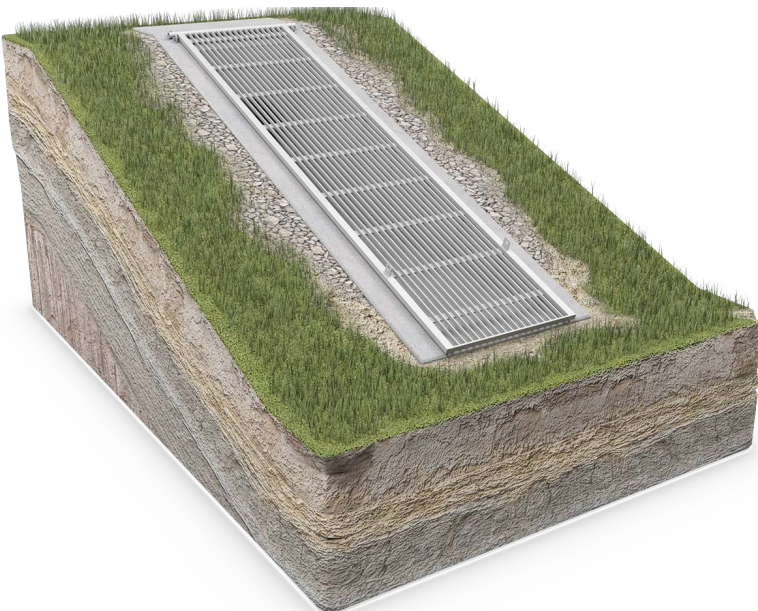
The Local Jurisdiction Storm Water Quality Guidance Manual requires all new development and significant redevelopment projects to install a Post-Construction Best Management Practice (BMP). Post-Construction BMP's take different forms, both structural and nonstructural. Examples of nonstructural controls include public service announcements, controlling sources of water pollution, and low impact development. Structural controls are stormwater quality basins, detention ponds, vegetative practices, and floatable collection products.

Regardless of the size or design, an interceptor is only as good as its maintenance program. For this reason, most plumbing codes require the interceptors to be installed and located in areas easily accessible for inspection, cleaning and removal of collected debris. The TrashTrooper is equipped with an access hatchway and an integrated ladder to permit access for cleaning all areas of the system. The product is to be installed below grade, and is typically located before a primary treatment unit for further separation and treatment of smaller pollutants.

MAINTENANCE

BMPs like dry/wet ponds are typically designed to completely drain within 24 to 48 hours after the completion of a storm event. These BMPs are designed to mimic natural conditions by allowing water to soak into the ground and limiting the release of stormwater to other pipes or bodies of water. Monthly maintenance is advised in heavy weather months or after any major storm event (using 1 inch in 24 hours as a minimum guideline depending on non-structural controls of the site).

The frequency of cleaning any given installation will vary depending on its use. The TrashTrooper should be cleaned routinely to prevent contamination of the effluent water. Collected debris should be removed before accumulations effectively reduce storage capacity as well and effluent flow rate out of the interceptor. A professional company familiar with regulations regarding proper disposal should maintain the interceptor.



SIZING

The following sizing charts for the TrashTrooper interceptor are based on the method of equivalent open areas, where the cross-sectional area of the pipe is less than or equal to the open area of the grate with the maximum anticipated blinding. These charts should serve as a reference guide and are subject to change based on recommendation by the Engineer of Record.

TrashTrooper should be sized based on the anticipated amount of debris depending on the amount of trash, but also on the surrounding vegetation. Blinding of the screen can occur with the accumulation of captured pollutant.

However, blinding can occur by leaves, branches, and vegetation of the surrounding natural ecosystem. ParkUSA has provided two sizing methods to take into consideration standard blinding and heavy blinding conditions. Standard blinding would take place on a site with minimal trees and other vegetation. Sites that are densely covered by trees and other vegetation are considered heavy blinding areas.

The open area of the sloped grate in the treated flow area is assumed to be 92 percent of the total area of the grate. All TrashTrooper models utilize 2-inch screen system and a platform/by pass system.

HEAVY BLINDING LOADING (CONSIDERABLE TRASH, LEAVES, PINE NEEDLES, ETC.)

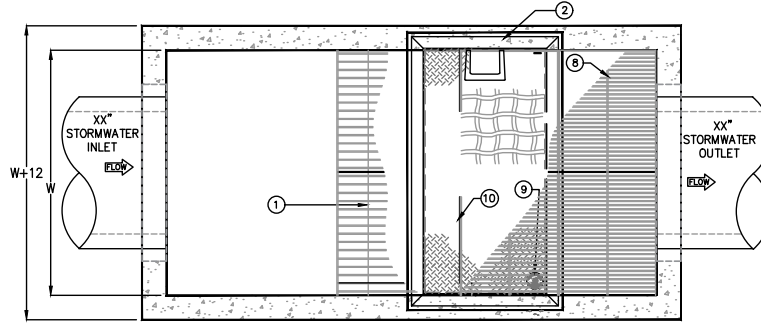
MODEL	MAX. PIPE SIZE (IN INCHES)	AREA OF THE PIPE (FT ²)	NOMINAL FLOWRATE (CFS USING V = 4 FPS)	HEIGHT OF PLATFORM ABOVE BASE (FT)	ANGLE OF THE GRATE (DEGREES)	LENGTH OF GRATE (FT)
TTB- 66 - 24	24	3.1	12.4	2	45	2.8
TTB- 66 - 30	30	4.9	19.6	2.5	45	3.5
TTB- 66 - 36	36	7.1	28.4	3	45	4.2
TTB- 66 - 42	42	9.6	38.4	3.5	45	4.9
TTB- 66 - 48	48	12.6	50.4	4	45	5.6
TTB- 66 - 54	54	15.9	63.6	5	35	8.7
TTB- 66 - 60	60	19.6	78.4	5.5	35	9.6
TTB- 66 - 72	72	28.3	113.2	7.5	36	12.7

STANDARD BLINDING LOADING (NORMAL TRASH, LEAVES, PINE NEEDLES, ETC.)

MODEL	MAX. PIPE SIZE (IN INCHES)	AREA OF THE PIPE (FT ²)	NOMINAL FLOWRATE (CFS USING V = 4 FPS)	HEIGHT OF PLATFORM ABOVE BASE (FT)	ANGLE OF THE GRATE (DEGREES)	LENGTH OF GRATE (FT)
TTB- 33 -24	24	3.1	12.4	2	45	2.8
TTB- 33 -30	30	4.9	19.6	2.5	45	3.5
TTB- 33 -36	36	7.1	28.4	3	45	4.2
TTB- 33 -42	42	9.6	38.4	3.5	45	4.9
TTB- 33 -48	48	12.6	50.4	4	45	5.6
TTB- 33 -54	54	15.9	63.6	5	45	7
TTB- 33 -60	60	19.6	78.4	6	45	8.4
TTB- 33 -72	72	28.3	113.2	7.5	45	10.6
TTB- 33 -84	84	38.5	154	7.5	45	10.6
TTB- 33 -96	96	50.3	201.2	7.5	30	15.1

	INTERIOR WIDTH (FT)	AREA OF GRATE (FT ²)	OPEN AREA OF GRATE (FT ²)	OPEN AREA W/ 67% BLINDING (FT ²)	BYPASS AREA (FT ²)	SIZE OF OUTSIDE OF VAULT (WXLXH)
	6	16.8	15.5	5.1	17.3	6' X 11' X 7'
	6	21	19.3	6.4	17.3	6' X 11' X 9'
	6	25.2	23.2	7.7	17.3	6' X 11' X 9'
	7	34.3	31.6	10.4	20.2	7' X 13' X 9'
	7	39.2	36.1	11.9	20.2	7' X 13' X 9'-7"
	7	60.9	56	18.5	20.2	7' X 13' X 9'-2"
	7	67.2	61.8	20.4	20.2	7' X 13' X 9'-0"
	7.5	95.3	87.6	28.9	27.6	8'-6" X 16' X 9'

	INTERIOR WIDTH (FT)	AREA OF GRATE (FT ²)	OPEN AREA OF GRATE (FT ²)	OPEN AREA W/ 33% BLINDING (FT ²)	BYPASS AREA (FT ²)	SIZE OF OUTSIDE OF VAULT (WXLXH)
	6	16.8	15.5	10.2	17.3	6' X 11' X 7'
	6	21	19.3	12.7	17.3	6' X 11' X 9'
	6	25.2	23.2	15.3	17.3	6' X 11' X 9'
	7	34.3	31.6	20.9	20.2	7' X 13' X 9'
	7	39.2	36.1	23.8	20.2	7' X 13' X 9'-7"
	7	49	45.1	29.8	20.2	7' X 13' X 9'-2"
	7	58.8	54.1	35.7	20.2	7' X 13' X 9'-0"
	7.5	79.5	73.1	48.2	27.6	8'-6" X 16' X 9'
	8	84.8	78	51.5	29.4	9'-0" X 18' X 9'-6"
	10	151	138.9	91.7	55.2	11' X 21'-2" X 11'-2"



PLAN VIEW

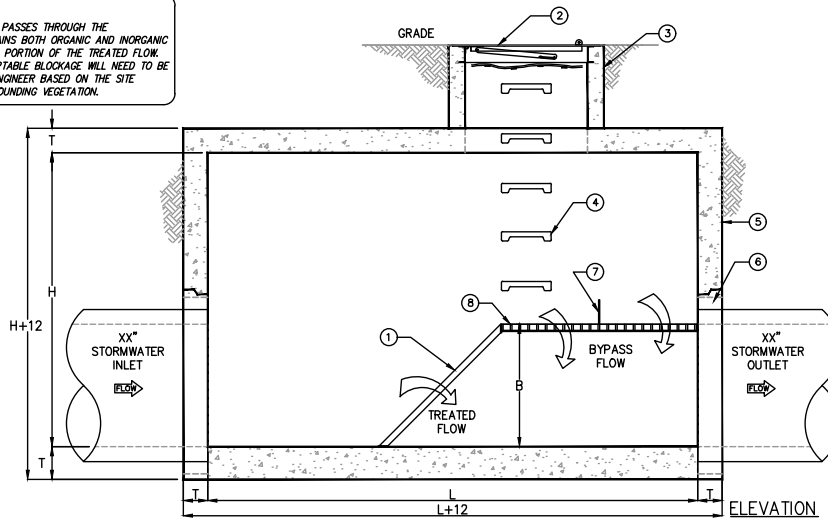


NAMEPLATE

TTB-STD									
MODEL NO.	MAX PIPE SIZE	LENGTH (L) I.D.	WIDTH (W) I.D.	HEIGHT (H) I.D.	WALL THICKNESS (T)	GRATE (B)	AREA OF PIPE (ft ²)	OPEN AREA OF GRATE (ft ²)	AREA OF BYPASS (ft ²)
TTB-24-33	24"	10'-0"	5'-0"	8'-0"	0'-6"	24"	3.1	10.2	17.3
TTB-24-66	24"	10'-0"	5'-0"	8'-0"	0'-6"	24"	3.1	5.1	17.3
TTB-30-33	30"	10'-0"	5'-0"	8'-2"	0'-6"	30"	4.9	12.7	17.3
TTB-30-66	30"	10'-0"	5'-0"	8'-2"	0'-6"	30"	4.9	6.4	17.3
TTB-36-33	36"	10'-0"	5'-0"	8'-2"	0'-6"	36"	7.1	15.3	17.3
TTB-36-66	36"	10'-0"	5'-0"	8'-2"	0'-6"	36"	7.1	7.7	17.3
TTB-42-33	42"	12'-0"	6'-0"	8'-0"	0'-6"	42"	9.6	17.80	17.3
TTB-42-66	42"	12'-0"	6'-0"	8'-0"	0'-6"	42"	9.6	8.90	17.3
TTB-48-33	48"	12'-0"	6'-0"	8'-7"	0'-6"	48"	12.6	20.4	17.3
TTB-48-66	48"	12'-0"	6'-0"	8'-7"	0'-6"	48"	12.6	10.20	17.3
TTB-54-33	54"	13'-0"	7'-0"	9'-2"	0'-6"	54"	15.9	45.1	20.2
TTB-60-33	60"	13'-0"	7'-0"	9'-0"	0'-6"	60"	19.6	54.1	20.2
TTB-72-33	72"	15'-0"	7'-6"	8'-9"	0'-6"	72"	28.3	48.2	27.6

KEYED NOTES	
MARK	DESCRIPTION
1	1 GALV. STEEL BAR GRATE 2" x 1/4" @ 3" O.C.
2	1 XX'XXX' GALVANIZED STEEL HATCHWAY W/ LOCK HASP (OFFSET) w/SAFETY NET
3	1 CONCRETE EXTENSION AS REQUIRED
4	1 OSHA APPROVED STEPS @ 12" O.C.
5	1 PRECAST CONCRETE TRASH SEPARATOR
6	1 XX"Ø HOLE FOR PIPE
7	1 KICKPLATE
8	1 REMOVABLE GALV. 1-1/4"x3/16" SERRATED GRATE
9	1 NAMEPLATE MFG: PARKUSA 888-611-PARK WWW.PARKUSA.COM MODEL: TTB-XX DATE MANUFACTURED S/N: XXXXXX
10	1 SAFETY NET

Design Tip:
AS THE STORM WATER PASSES THROUGH THE TRASHTROOPER IT RETAINS BOTH ORGANIC AND INORGANIC DEBRIS AND BLOCKS A PORTION OF THE TREATED FLOW. THE AMOUNT OF ACCEPTABLE BLOCKAGE WILL NEED TO BE DETERMINED BY THE ENGINEER BASED ON THE SITE CONDITIONS AND SURROUNDING VEGETATION.



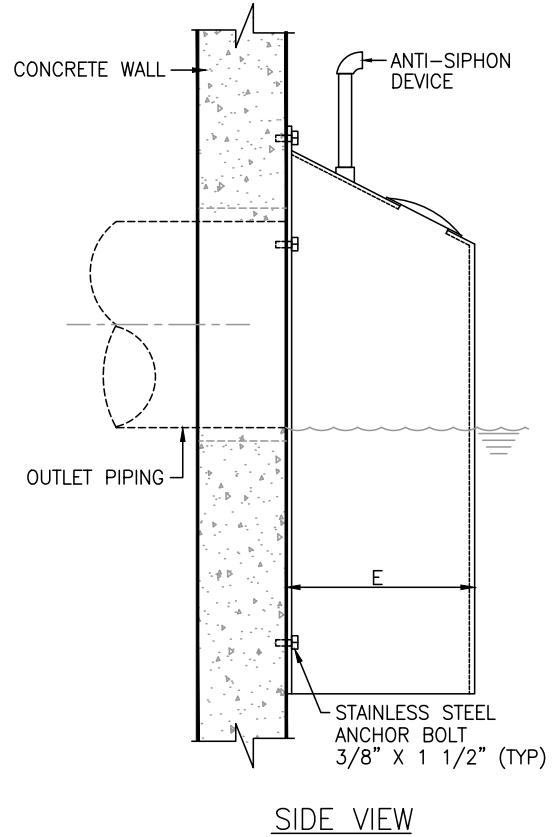
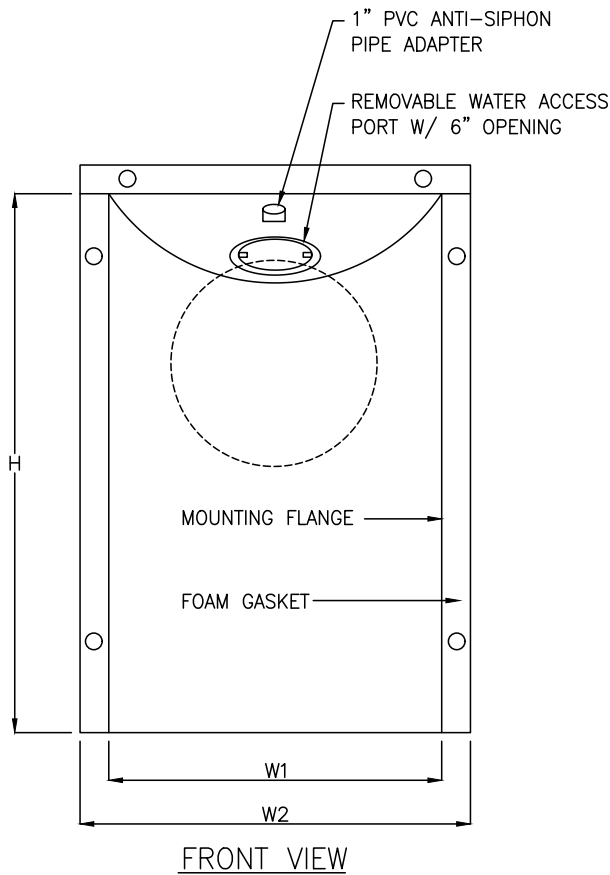
ELEVATION

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SPECIFICATIONS

- CONCRETE :** CLASS I/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. COMBINED ASSEMBLY WEIGHT OF APPROXIMATELY 36,100 LBS.
- REINFORCEMENT:** GRADE 60 REINFORCED. STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL. BAR BENDING & PLACEMENT SHALL COMPLY WITH THE LATEST ACI STANDARDS FOR PRECAST CONCRETE. LIFTING INSERTS SHALL BE INSTALLED PER MFG'S REQUIREMENTS.
- STEEL:** ALL STEEL SHALL BE A36 STEEL WELDED IN ACCORDANCE TO AWS D1.1. ALL STEEL SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.

A	.	.	.
REV	DATE	BY	DESCRIPTION
PROJECT: .			
CUSTOMER: .			
ENGINEER: .			
ORDER #:		PROJ #:	
DATE:		LOCATION:	
www.parkusa.com		888-611-PARK	
TRASHTROOPER SOLIDS INTERCEPTOR MODEL TTB-24 THRU 72			
PM	PC	DRN	ENG
DWG. NO.			REV.
DATE			TTB-1




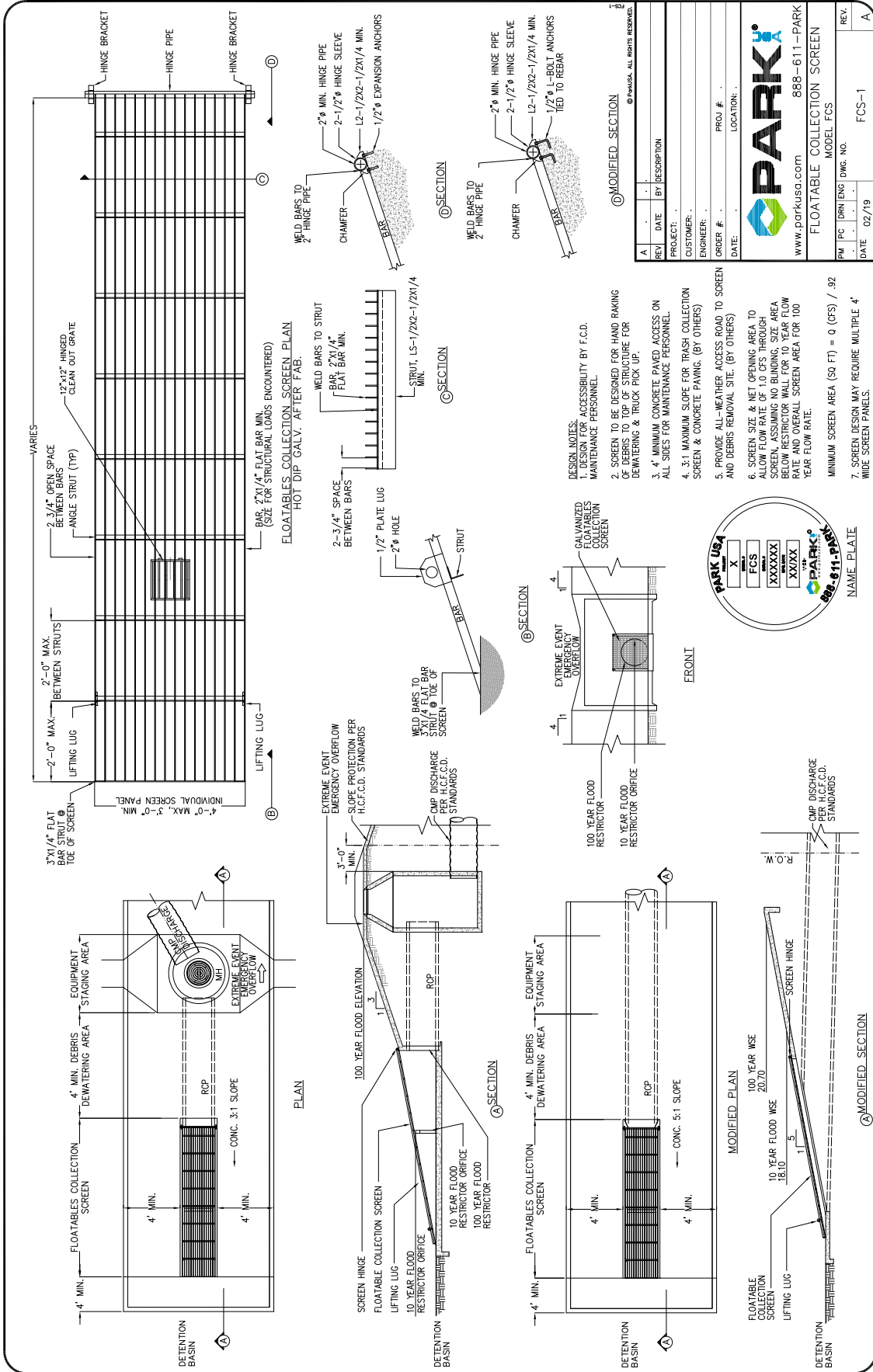
MODEL	D MAX PIPE SIZE	W1	W2	E	H
HH-08	8	12	15	6	12
HH-10	10	16	19	8	14
HH-12	12	18	22	9	16
HH-16	16	24	28	12	20
HH-18	18	26	30	12	22
HH-20	20	28	32	13	24
HH-24	24	32	36	14	28
HH-30	30	36	38	15	36
HH-36	36	38	42	16	42

ALL DIMENSIONS IN INCHES

NOTES	
1	PARKUSA 7015 FAIRBANKS N HOUSTON RD HOUSTON, TX 77040 TOLL FREE: 888-611-PARK WEB SITE: WWW.PARKUSA.COM
2	ALL HOODS SHALL BE CONSTRUCTED OF HIGH DENSITY POLYETHYLENE WITH A MINIMUM .375" THICKNESS.
3	ALL HOODS SHALL BE EQUIPPED WITH A WATERTIGHT ACCESS PORT, A MOUNTING FLANGE, AND AN ANTI-SIPHON VENT AS DRAWN. (SEE CONFIGURATION DETAIL).
4	THE SIZE AND POSITION OF THE HOOD SHALL BE DETERMINED BY OUTLET PIPE SIZE AS PER MANUFACTURER'S RECOMMENDATION.
5	THE BOTTOM OF THE HOOD SHALL EXTEND DOWNWARD A DISTANCE EQUAL TO 1/2 THE OUTLET PIPE DIAMETER WITH A MINIMUM DISTANCE OF 6" FOR PIPE >12" I.D.
6	THE ANTI-SIPHON VENT SHALL EXTEND ABOVE HOOD BY MINIMUM OF 3" AND A MAXIMUM OF 24" ACCORDING TO STRUCTURE CONFIGURATION.
7	THE SURFACE OF THE STRUCTURE WHERE THE HOOD IS MOUNTED SHALL BE FINISHED SMOOTH AND FREE OF LOOSE MATERIAL.
8	THE HOOD SHALL BE SECURELY ATTACHED TO STRUCTURE WALL WITH 3/8" STAINLESS STEEL BOLTS AND OIL-RESISTANT GASKET AS SUPPLIED BY MANUFACTURER. (SEE INSTALLATION DETAIL).

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PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: .	LOCATION: .
 www.parkusa.com 888-611-PARK	
HYDRAULIC HOOD MODEL HH	
PM .	PC .
DRN .	ENG .
DATE 05/2019	DWG. NO. HH-1
REV. .	



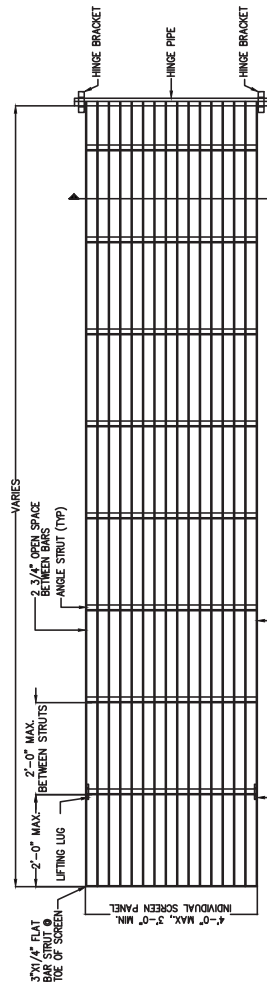
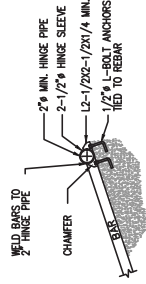
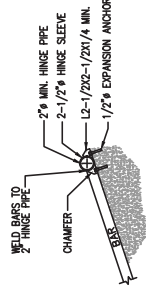


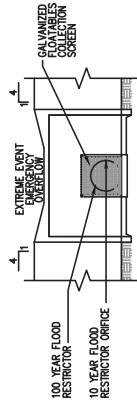
FIGURE 1
ELEVATION



SECTION A-A



SECTION B-B



FRONT

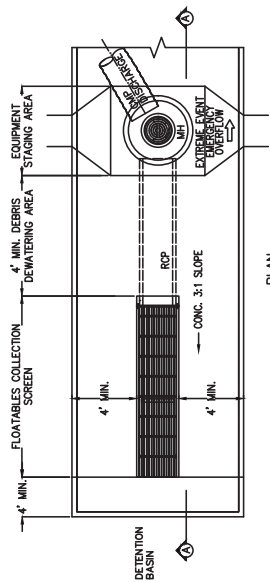


IN COMPLIANCE WITH
HARRIS COUNTY FLOOD
CONTROL, 2012

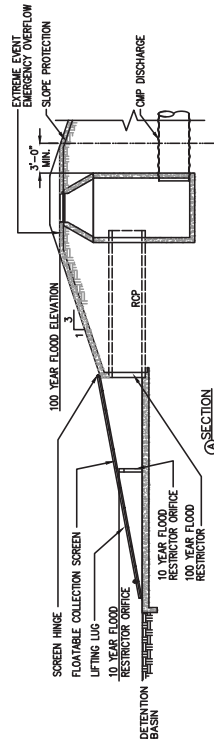
PROJECT:	
CUSTOMER:	
ENGINEER:	
ORDER #:	PROJ #:
DATE:	LOCATION:
PARK	
www.parkusa.com 888-611-PARK	
FLOATABLE COLLECTION SCREEN	
MODEL-FCS	
DATE: 01/2019	REV: FCS-DETAIL

DESIGN NOTES:

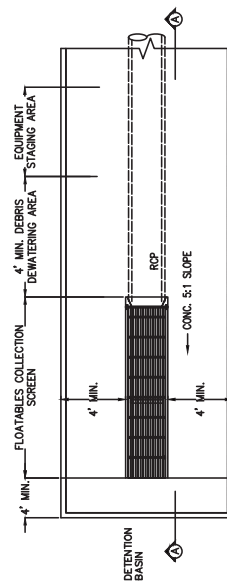
1. DESIGN FOR ACCESSIBILITY BY MAINTENANCE PERSONNEL.
2. SCREEN TO BE DESIGNED FOR HAND RAKING OF DEBRIS TO TOP OF STRUCTURE FOR DEWATERING & TRUCK PICK UP.
3. 4' MINIMUM CONCRETE PAVED ACCESS ON ALL SIDES FOR MAINTENANCE PERSONNEL.
4. 3:1 MAXIMUM SLOPE FOR TRASH COLLECTION SCREEN & CONCRETE PAVING. (BY OTHERS)
5. PROVIDE ALL-WEATHER ACCESS ROAD TO SCREEN AND DEBRIS REMOVAL SITE. (BY OTHERS)
6. SCREEN SIZE & NET OPENING AREA TO ALLOW FLOW RATE OF 1.0 CFS THROUGH SCREEN, ASSUMING NO BLINDING, SIZE AREA BELOW RESTRICTOR WALL FOR 10 YEAR FLOW RATE AND OVERALL SCREEN AREA FOR 100 YEAR FLOW RATE.
7. MINIMUM SCREEN AREA (50 FT) = 0 (CFS) / .92
8. SCREEN DESIGN MAY REQUIRE MULTIPLE 4' WIDE SCREEN PANELS.



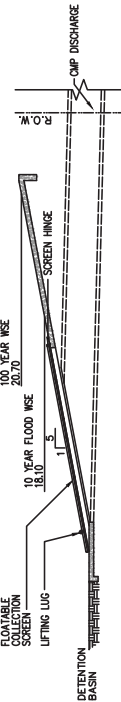
PLAN



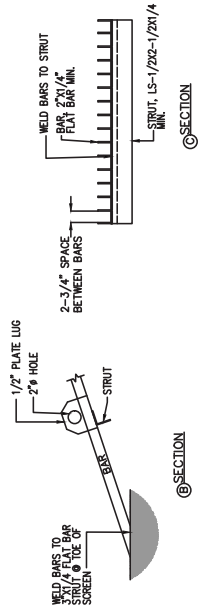
SECTION C-C



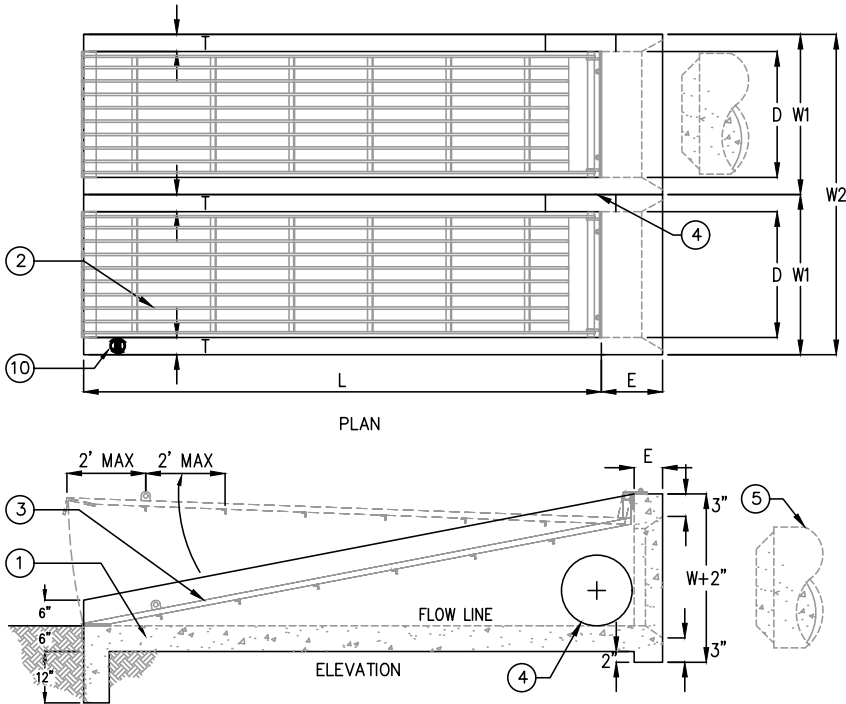
MODIFIED PLAN



SECTION D-D



SECTION E-E

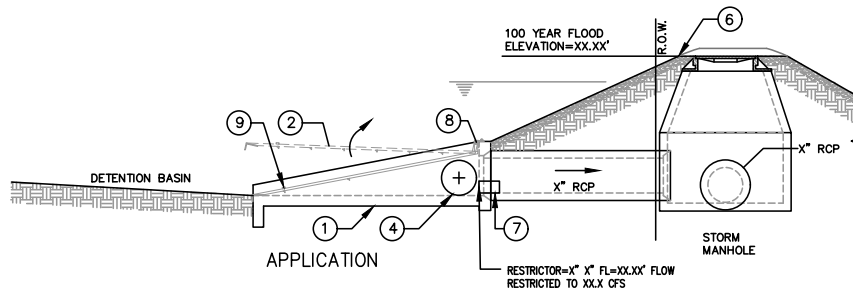
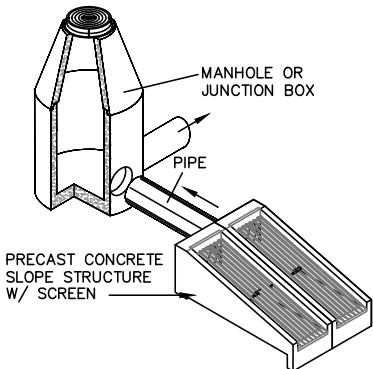


- DESIGN NOTES:**
1. DESIGN FOR ACCESSIBILITY BY HCFCO MAINTENANCE PERSONNEL
 2. SCREEN TO BE DESIGNED FOR HAND RAKING OF DEBRIS TO TOP OF STRUCTURE FOR DEWATERING & TRUCK PICK UP.
 3. 4' MINIMUM CONCRETE PAVED ACCESS ON ALL SIDES FOR MAINTENANCE PERSONNEL. (BY OTHERS)
 4. 3:1 MAXIMUM SLOPE FOR TRASH COLLECTION SCREEN & PAVING.
 5. PROVIDE ALL-WEATHER ACCESS ROAD TO SCREEN & DEBRIS REMOVAL SITE. (BY OTHERS)
 6. SCREEN SIZE & NET OPENING AREA TO ALLOW FLOW RATE OF 1.0 CFS THROUGH SCREEN, ASSUMING NO BLINDING, SIZE AREA BELOW RESTRICTOR WALL FOR 10 YEAR FLOW RATE & OVERALL SCREEN AREA FOR 100 YEAR FLOW RATE.
MINIMUM SCREEN AREA (SQ FT) = Q (cfs) / .92
 7. SCREEN DESIGN MAY REQUIRE MULTIPLE SCREEN PANELS.

KEYED NOTES		
MARK	QTY	DESCRIPTION
1	2	PRECAST CONCRETE SLOPE STRUCTURE
2	2	FLOATABLES COLLECTION SCREEN, GALVANIZED STEEL, 2"x1/4" BARS @ 3" O.C., 2 3/4" CLEAR OPENING
3	2	2"x1/4" GALVANIZED ANGLE BOLTED TO CONCRETE WITH 1/2" ANCHOR BOLTS
4	1	INTERCONNECT PIPING
5	1	PIPE BY OTHERS
6	1	EXTREME EVENT EMERGENCY OVERFLOW
7	1	5 LF X" RESTRICTOR BRICKED IN PLACE
8	2	SCREEN HINGE
9	-	LIFTING LUG (TYP)
10	1	NAMEPLATE INDICATING: MFG: PARKUSA 888-611-PARK WWW.PARKUSA.COM MODEL: FCS-M2 DATE MANUFACTURED

MODEL	PIPE DIA D	SLOPE	SCREEN AREA SQ. FT.	W1	W2	L	T	E	WEIGHT LBS EA X 2
FCS-12-2	12"	3:1	6.50	1'-10"	3'-8"	3'-3"	5"	12"	1680
FCS-15-2	15"	3:1	10.00	2'-1"	4'-2"	4'-0"	5"	12"	1680
FCS-18-2	18"	3:1	14.26	2'-5"	4'-10"	4'-9"	5"	12"	2120
FCS-24-2	24"	3:1	25.00	3'-0"	6'-0"	6'-3"	5"	12"	3120
FCS-30-2	30"	3:1	38.76	3'-6"	7'-0"	7'-9"	5"	12"	4280
FCS-36-2	36"	3:1	60.00	4'-3"	8'-6"	10'-0"	6"	12"	6200

IN COMPLIANCE WITH HARRIS COUNTY FLOOD CONTROL, 2012



SPECIFICATIONS

CONCRETE : CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION INCLUDING WALLS AND FLOOR.

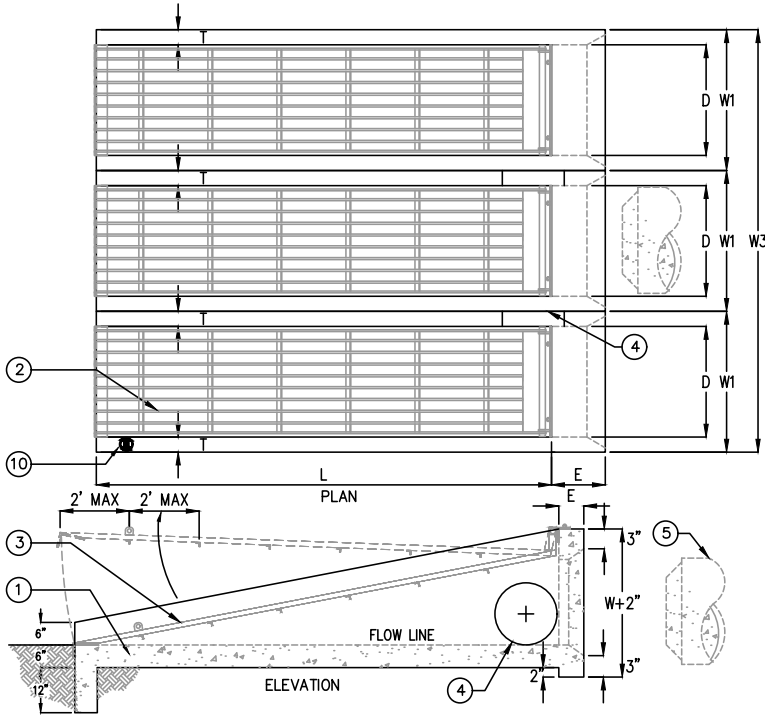
REINFORCEMENT: GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL. BAR BENDING AND PLACEMENT SHALL WITH THE LATEST ACI STANDARDS.

SCREEN: ALL STEEL FABRICATION SHALL BE IN ACCORDANCE TO AWA D1.1. STEEL SHALL BE ASTM A36 CARBON STEEL, AND HOT-DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE TO ASTM A123.



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PROJECT:	
CUSTOMER:	
ENGINEER:	
ORDER #:	PROJ #:
DATE:	LOCATION:
PARK	
www.parkusa.com 888-611-PARK	
FLOATABLES COLLECTION SCREEN MODEL FCS-M2 (MULTIPLE x2)	
PM	DRN
PC	ENG
DATE	DWG. NO.
02/2019	FCS-M2
REV.	

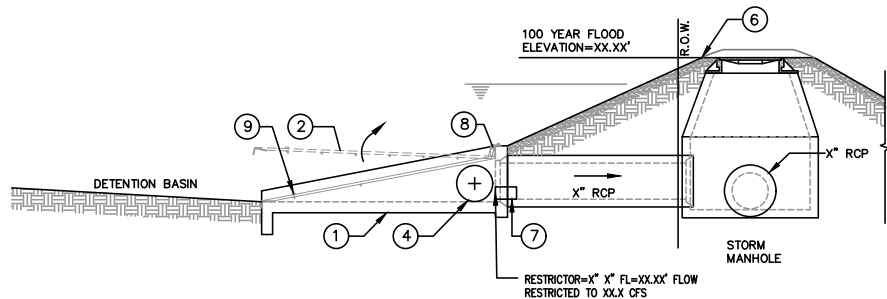
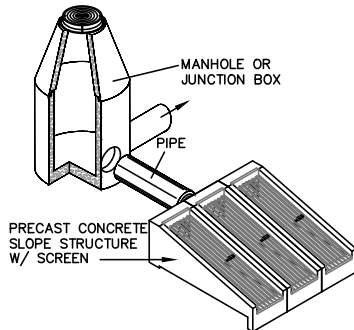


- DESIGN NOTES:**
1. DESIGN FOR ACCESSIBILITY BY MAINTENANCE PERSONNEL
 2. SCREEN TO BE DESIGNED FOR HAND RAKING OF DEBRIS TO TOP OF STRUCTURE FOR DEWATERING & TRUCK PICK UP.
 3. 4" MINIMUM CONCRETE PAVED ACCESS ON ALL SIDES FOR MAINTENANCE PERSONNEL. (BY OTHERS)
 4. 3:1 MAXIMUM SLOPE FOR TRASH COLLECTION SCREEN & PAVING.
 5. PROVIDE ALL-WEATHER ACCESS ROAD TO SCREEN & DEBRIS REMOVAL SITE. (BY OTHERS)
 6. SCREEN SIZE & NET OPENING AREA TO ALLOW FLOW RATE OF 1.0 CFS THROUGH SCREEN, ASSUMING NO BLINDING, SIZE AREA BELOW RESTRICTOR WALL FOR 10 YEAR FLOW RATE & OVERALL SCREEN AREA FOR 100 YEAR FLOW RATE.
MINIMUM SCREEN AREA (SQ FT) = $Q \text{ (cfs)} / .82$
 7. SCREEN DESIGN MAY REQUIRE MULTIPLE SCREEN PANELS.

KEYED NOTES		
MARK	QTY	DESCRIPTION
1	3	PRECAST CONCRETE SLOPE STRUCTURE
2	3	FLOATABLES COLLECTION SCREEN, GALVANIZED STEEL, 2" x 1/4" BARS @ 3" O.C., 2" CLEAR OPENING
3	3	2" x 1/4" GALVANIZED ANGLE BOLTED TO CONCRETE WITH 1/2" ANCHOR BOLTS
4	2	INTERCONNECT PIPING
5	1	PIPE BY OTHERS
6	1	EXTREME EVENT EMERGENCY OVERFLOW
7	1	5 LF X" RESTRICTOR BRICKED IN PLACE
8	3	SCREEN HINGE
9	-	LIFTING LUG (TYP)
10	1	NAMEPLATE INDICATING: MFG: PARKUSA 888-611-PARK WWW.PARKUSA.COM MODEL: FCS-M3 DATE MANUFACTURED

MODEL	PIPE DIA D	SLOPE	SCREEN AREA SQ. FT.	W1	W3	L	T	E	WEIGHT LBS EA X 3
FCS-12-3	12"	3:1	9.75	1'-10"	5'-6"	3'-3"	5"	12"	1680
FCS-15-3	15"	3:1	15.00	2'-1"	6'-3"	4'-0"	5"	12"	1680
FCS-18-3	18"	3:1	21.39	2'-5"	7'-3"	4'-9"	5"	12"	2120
FCS-24-3	24"	3:1	37.50	3'-0"	9'-0"	6'-3"	5"	12"	3120
FCS-30-3	30"	3:1	58.14	3'-6"	10'-6"	7'-9"	5"	12"	4280
FCS-36-3	36"	3:1	90.00	4'-3"	12'-9"	10'-0"	6"	12"	6200

IN COMPLIANCE WITH
HARRIS COUNTY FLOOD
CONTROL, 2012



SPECIFICATIONS

- CONCRETE:** CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION INCLUDING WALLS AND FLOOR.
- REINFORCEMENT:** GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL. BAR BENDING AND PLACEMENT SHALL WITH THE LATEST ACI STANDARDS.
- SCREEN:** ALL STEEL FABRICATION SHALL BE IN ACCORDANCE TO AWA D1.1. STEEL SHALL BE ASTM A36 CARBON STEEL, AND HOT-DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE TO ASTM A123.

APPLICATION



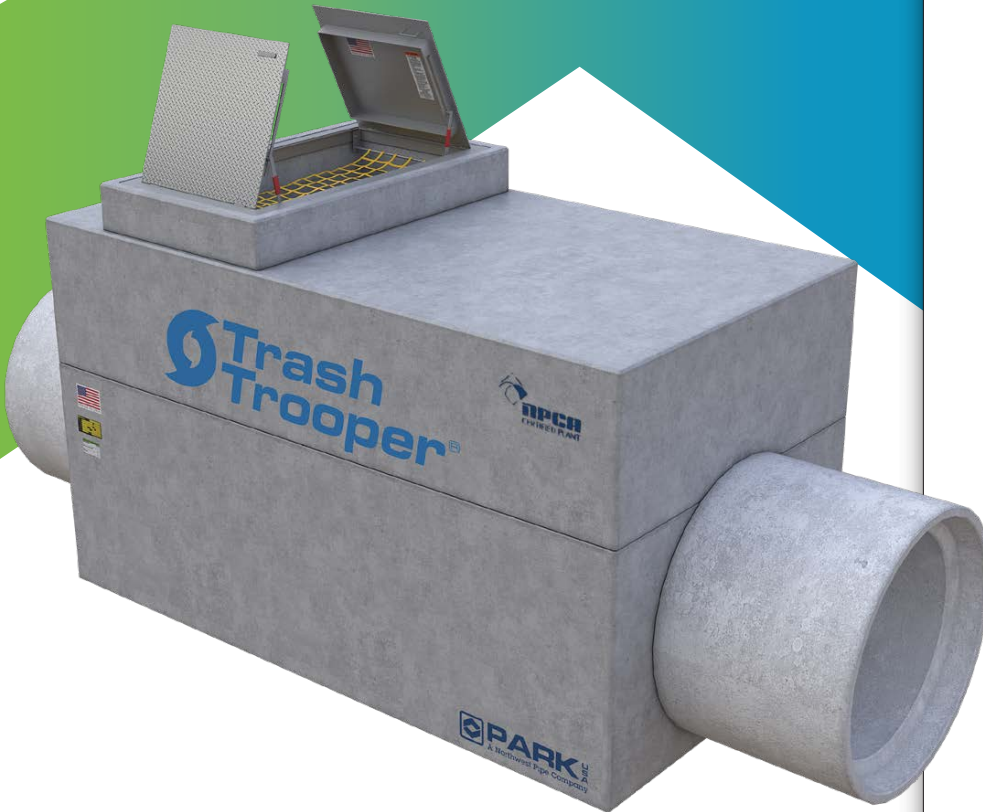
PROJECT: .
CUSTOMER: .
ENGINEER: .
ORDER # . PROJ # .
DATE . LOCATION: .

PARK USA
www.parkusa.com 888-611-PARK

FLOATABLES COLLECTION SCREEN
MODEL FCS-M3 (MULTIPLE x3)

PM	PC	DRN	ENG	DWG. NO.	REV.
				FCS-M3	

DATE 02/2019



Features

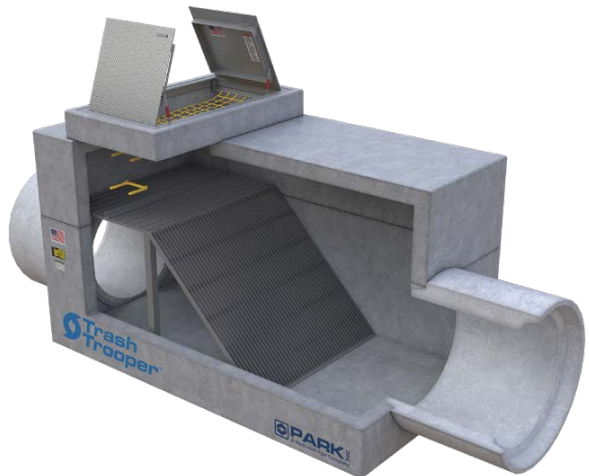
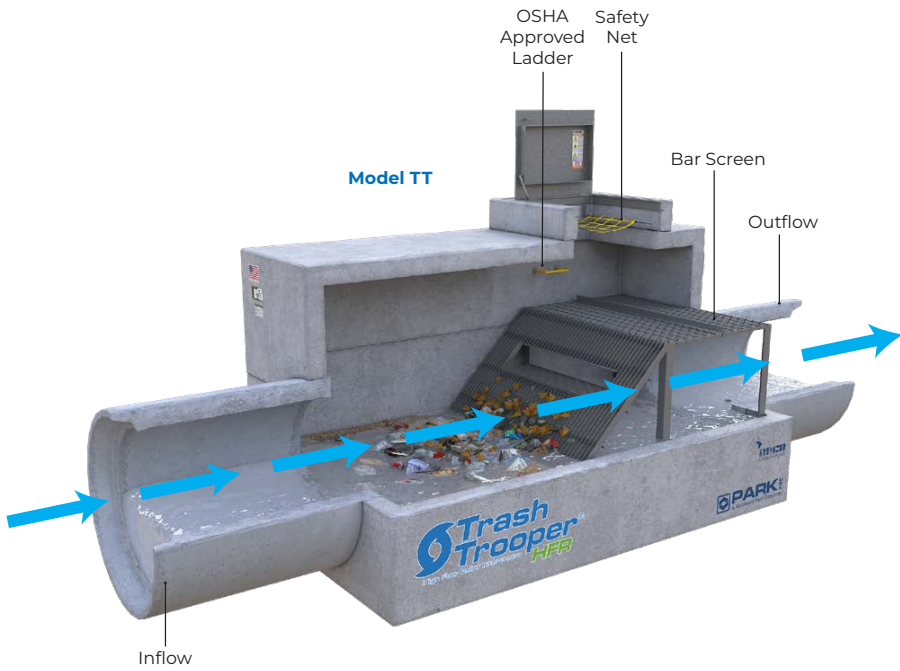
- Various bar screen designs
- Low profile design
- LEED compliant
- Manufactured in Texas
- Easy installation and maintenance
- Captures floatable pollutants

Stormwater Treatment

The increasing presence of trash in our waterways is harmful to aquatic habitats and animal wildlife. ParkUSA®'s TrashTrooper® is a product of inline screening systems designed to collect and contain a wide variety of floatable pollution. US EPA is requiring municipalities nationwide to address floatable pollution through the municipal separate storm sewer systems (MS4) permitting process. TrashTrooper serves as an effective best management practice (BMP), limiting the quantity of harmful pollutants being discharged during and following rain events. While the best method for addressing floatables in waterways is through public education ("don't litter" campaigns, signage, inlet markers, etc.), floatable collection products will separate a large percentage of floating trash and debris from stormwater.



SW | TRASHTROOPER
Standard



System Components

The TrashTrooper is designed with the following components:

- Bar screens
- Heavy-duty galvanized steel collection screens
- Inlet debris screens and pollution inserts
- Precast concrete structure
- Integral bypass
- Easy access hatchway
- Safety net
- Steps (OSHA approved)



How it Works


ParkUSA®'s TrashTrooper® captures unwanted floatable pollutants from stormwater systems. Inside the interceptor, the influent encounters a floatable collection bar screen that traps floating debris as small as 1 ½" in size, preventing it from invading MS4s, rivers, drainage swales, lakes, bayous, estuaries, and coastal waters. The separated effluent exits the TrashTrooper® and continues through the stormwater sewer system, leaving behind debris in the product.

Visit trashtrooper.parkusa.com for more information and design assistance

To request a quote or catalog, visit request.parkusa.com.



APPLICATIONS

 Good to use in BMPs	 Residential	 Low Impact Development	 Trash Retention	 Commercial	 Municipal
--	--	---	--	---	--

CATCH BASINS




PARK
USA
A Northwest Pipe Company

ENGINEERING FACTS

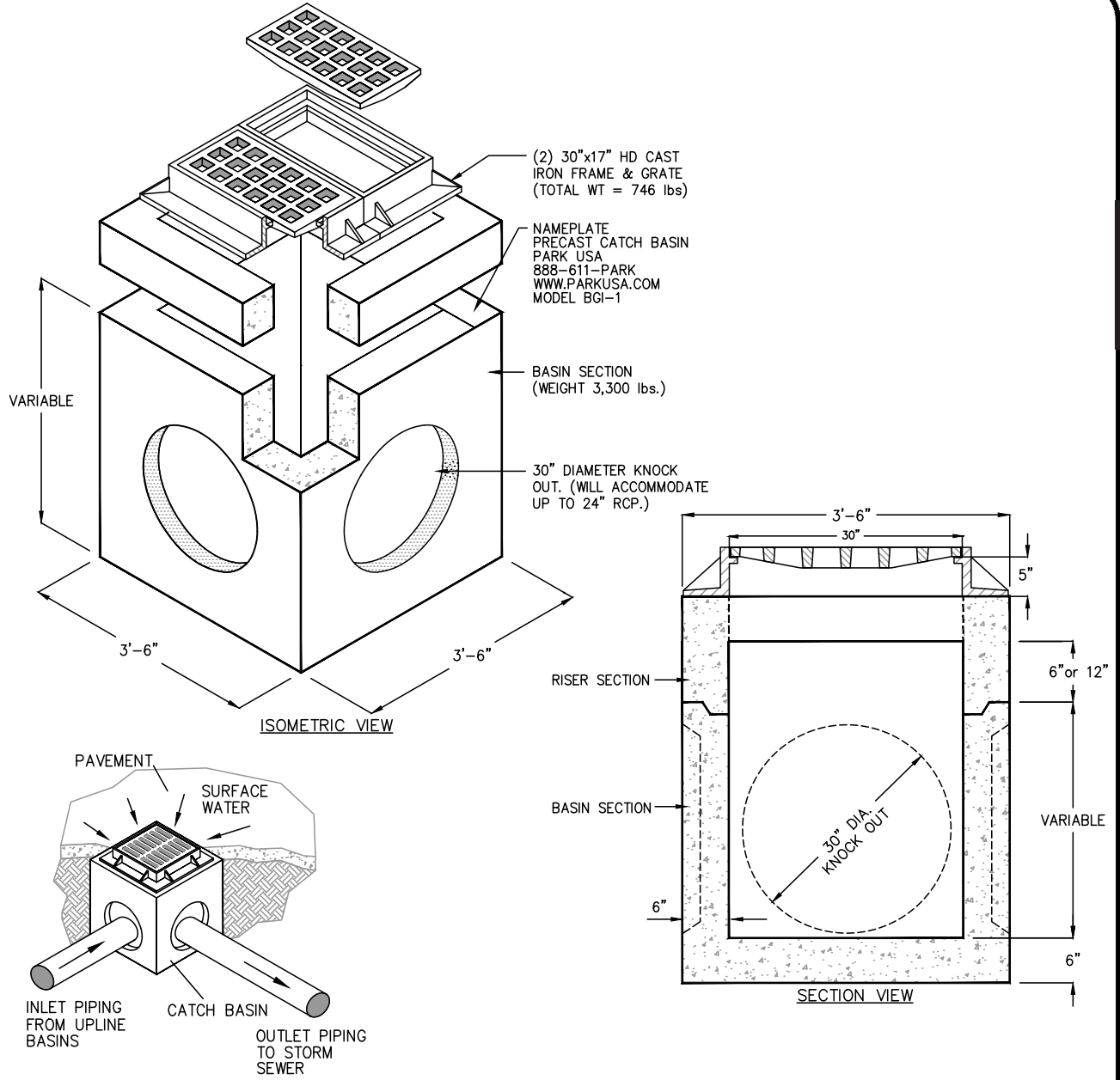
GENERAL INFORMATION

Rainwater surface drainage is typically performed by the use of Catch Basins, or sometimes referred to as Inlets. The Catch Basin is a belowground box structure with a horizontal opening at ground level, where a perforated grate is placed to allow rainwater to enter into the Catch Basin box. The grate is made of a material that best fits the intended use of the surface level. Generally, a parking lot would utilize a cast iron grate that is rated for vehicular rating. For pedestrian areas, a light duty grate can be used.

During a rain event, stormwater drains from the surface area into the grate openings of the Catch Basin. This water then drains into a sewer pipe that is connected to the Catch Basin box structure. The stormwater sewer piping is placed at a downward sloping gradient to encourage water to flow through the piping; this is also known as “gravity-flow”. Catch Basins can be linked up with pipe to create a network of drainage points.



Model CB




BGI-1

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SPECIFICATIONS

- CONCRETE :** CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.
- REINFORCEMENT:** GRADE 60 REINFORCED WITH STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS:** CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: .	LOCATION: .
 www.parkusa.com 888-611-PARK	
TYPE-B GRATE INLET MODEL BGI-1	
PM .	PC .
DRN .	ENG .
DATE 05/2019	DWG. NO. BGI-1
REV. .	

GRATE OPTIONS

TYPE-C
TRAFFIC DUTY CAST IRON GRATE

C.I. CASTINGS: MANHOLE FRAMES AND GRATES ARE MANUFACTURED OF GREY IRON CONFORMING TO ASTM A48-76 CLASS 30.

TYPE-V
V9600-SERIES CAST IRON FRAME & GRATE

D.I. CASTINGS: MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED OF DUCTILE IRON CONFORMING TO ASTM A536, A510 M306, & AASHTO M105 STANDARDS.

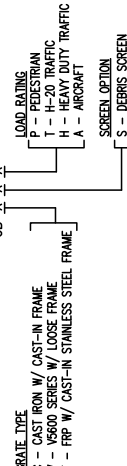
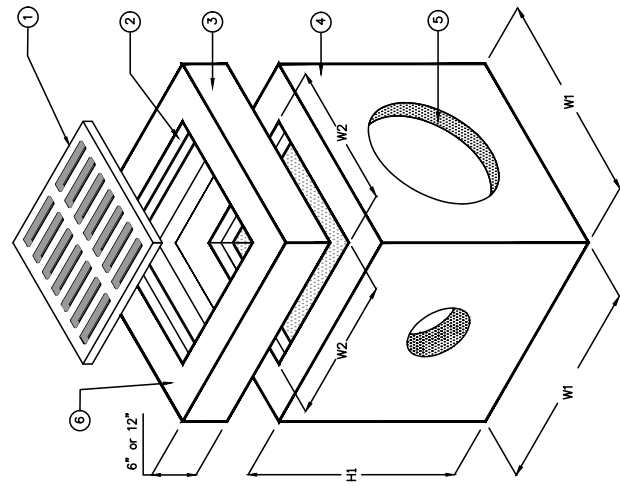
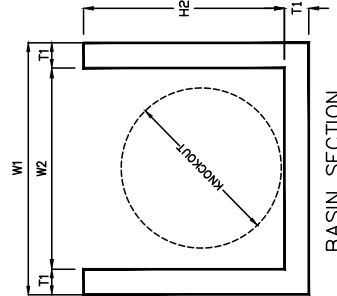
TYPE-F
ACID RESISTANT FRP GRATING, w/ STAINLESS STEEL FRAME (PEDESTRIAN DUTY)

GRATING: GRATING SHALL BE ACID-RESISTANT FIBERGLASS GRATING w/ STAINLESS STEEL ANGLE FRAME.

SCREEN OPTIONS

REMOVABLE DEBRIS SCREEN w/ (2) LIFT HANDLES, 304 STAINLESS STEEL, 1/2" HOLES @ 1/2" O.C. (50% FREE OPEN AREA)

MARK QTY	DESCRIPTION
1	GRATE OR COVER AS REQUESTED. SEE OPTIONS
1	CAST-IN STEEL FRAME
3	OPTIONAL TOP/EXTENSION 6"
1	PRECAST CONCRETE BASIN SECTION
4	KNOCKOUTS (STD) AND PENETRATIONS (OPT) AS REQUIRED. SEE KO DIMENSION FOR MAXIMUM PIPE O.D.*
5	NAMEPLATE INDICATING: MFG: PARKUSA 888-611-PARK MODEL: CB-1 DATE MANUFACTURED
6	



PARK MODEL NO.
CB-X-Y-Z

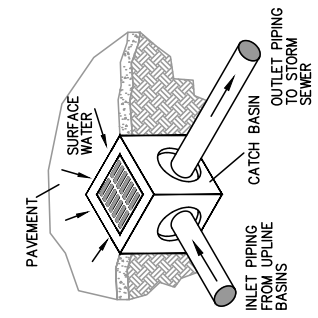
MODEL	W1	W2	H1	H2	T1	T2	KO	GRATE SIZE	OPEN AREA SQ IN	WEIGHT LBS
*CB-12	15"	10"	21"	18"	3"	2.5"	10"	12"x12"x1"	90	180
CB-14	20"	12"	28"	24"	4"	4"	12"	14"x14"x1/2"	120	600
CB-18	24"	16"	34"	30"	4"	4"	15"	18"x18"x1/2"	168	1,000
CB-20	26"	18"	34"	30"	4"	4"	17"	20"x20"x1/2"	170	1,335
CB-24	32"	22"	41"	36"	5"	5"	22"	24"x24"x2"	268	2,245
CB-27	37"	25"	42"	36"	6"	6"	24"	27"x27"x2"	350	2,875
CB-30	42"	30"	42"	36"	6"	6"	30"	32"x32"x2"	490	3,675
CB-36	48"	36"	42"	36"	6"	6"	32"	38"x38"x2"	693	4,585
CB-48	60"	48"	54"	48"	6"	6"	48"	38"x38"x2"	693	7,250
**CB-60	72"	60"	66"	60"	6"	6"	60"	38"x38"x2"	693	10,500
**CB-72	84"	72"	78"	72"	6"	6"	72"	38"x38"x2"	693	15,350
**CB-84	96"	84"	78"	72"	6"	6"	72"	38"x38"x2"	693	19,500

*ONLY PEDESTRIAN LOAD RATED GRATES AVAILABLE
**KNOCKOUTS NOT AVAILABLE

SPECIFICATIONS

CONCRETE : CLASS I/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT: GRADE 60 REINFORCED STEEL REBAR CONFORMING TO ASTM A615 OR REINFORCED CENTERS OR EQUAL.



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PROJECT: ..
CUSTOMER: ..
ENGINEER: ..
ORDER # : ..
DATE: ..

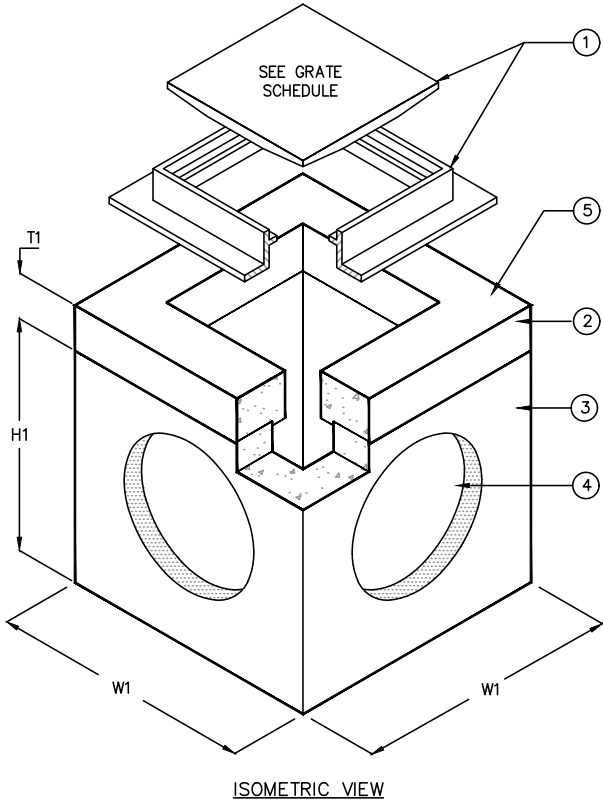
PROJ # : ..
LOCATION: ..



www.parkusa.com 888-611-PARK

CATCH BASIN
MODEL CB - 12" THRU 84"

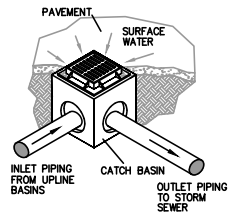
PM PC DRN ENG DWG. NO. REV.
DATE 05/2019 CB-1



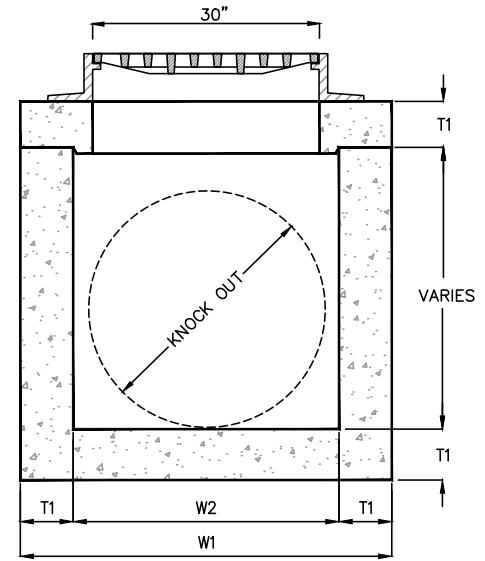
ISOMETRIC VIEW

GRATE SCHEDULE	
	GRATE = 200 lbs OPEN AREA = 489 sq ft MODEL No. V4880-1
	GRATE = 240 lbs OPEN AREA = 434 sq ft MODEL No. V4880-3
	GRATE = 270 lbs OPEN AREA = 387 sq ft MODEL No. V4880-4

KEYED NOTES		
MARK	QTY	DESCRIPTION
1	1	CAST IRON FRAME & GRATE
2	1	TOP SECTION
3	1	PRECAST CONCRETE BASIN SECTION
4	4	THIN WALL KNOCKOUT ON ALL 4 SIDES, SEE KO DIMENSION FOR MAXIMUM PIPE O.D.
5	1	NAMEPLATE MFG: ParkUSA 888-611-PARK WWW.PARKUSA.COM MODEL: CB4880



NOTE:
RISER SECTION AVAILABLE
IN 6" TO 12" DEPTHS.



SECTION VIEW

MODEL	W1	W2	H1	H2	T1	T2	KO	GRATE SIZE	OPEN AREA	WEIGHT LBS
CB-30	42"	30"	42"	36"	6"	6"	30"	30"x30"x2"	490	3,675
CB-36	48"	36"	42"	36"	6"	6"	32"	30"x30"x2"	693	4,585
CB-48	60"	48"	54"	48"	6"	6"	48"	30"x30"x2"	693	7,250
CB-60	72"	60"	66"	60"	6"	6"	60"	30"x30"x2"	693	10,500
CB-72	84"	72"	78"	72"	6"	6"	72"	30"x30"x2"	693	15,350
CB-84	96"	84"	78"	72"	6"	6"	72"	30"x30"x2"	693	19,500

SPECIFICATIONS

CONCRETE : CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.

REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.



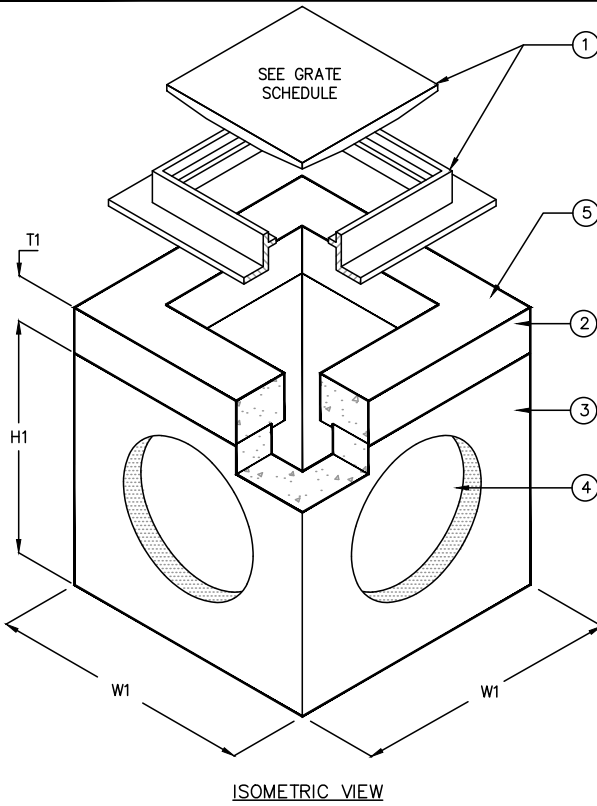
PROJECT:	
CUSTOMER:	
ENGINEER:	
ORDER #:	PROJ #:
DATE:	LOCATION:



TYPE-A GRATE INLET
MODEL CB4880 30" THRU 84"

PM	PC	DRN	ENG	DWG. NO.	REV.
				CB4880-1	
DATE				12/2020	

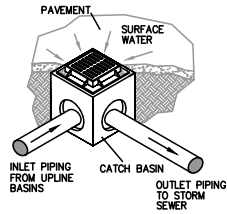
Stormwater
Quality



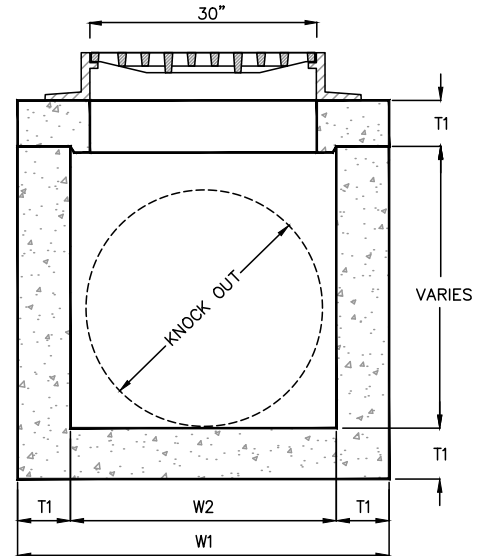
ISOMETRIC VIEW

GRATE SCHEDULE	
	MODEL No. V4880-1
	MODEL No. V4880-3
	MODEL No. V4880-4

KEYED NOTES		
MARK	QTY	DESCRIPTION
1	1	CAST IRON FRAME & GRATE
2	1	TOP SECTION
3	1	PRECAST CONCRETE BASIN SECTION
4	1	THIN WALL KNOCKOUT ON ALL 4 SIDES, SEE KO DIMENSION FOR MAXIMUM PIPE O.D.
5	1	PRECAST CATCH BASIN MFG: ParkUSA 888-611-PARK WWW.PARKUSA.COM MODEL: CB5600-1



NOTE:
RISER SECTION AVAILABLE IN 6" TO 12" DEPTHS.



SECTION VIEW

MODEL	W1	W2	H1	H2	T1	T2	KO	GRATE SIZE	OPEN AREA	WEIGHT LBS
CB-12	15"	10"	21"	18"	3"	2 1/2"	10"	12"x12"x1"	90	180
CB-14	20"	12"	28"	24"	4"	4"	12"	14"x14"x1 1/2"	120	600
CB-18	24"	16"	34"	30"	4"	4"	15"	18"x18"x1 1/2"	168	1,000
CB-20	26"	18"	34"	30"	4"	4"	17"	20"x20"x1 1/2"	170	1,335
CB-24	32"	22"	41"	36"	5"	5"	22"	24"x24"x2"	268	2,245
CB-27	37"	25"	42"	36"	6"	6"	24"	27"x27"x2"	350	2,875

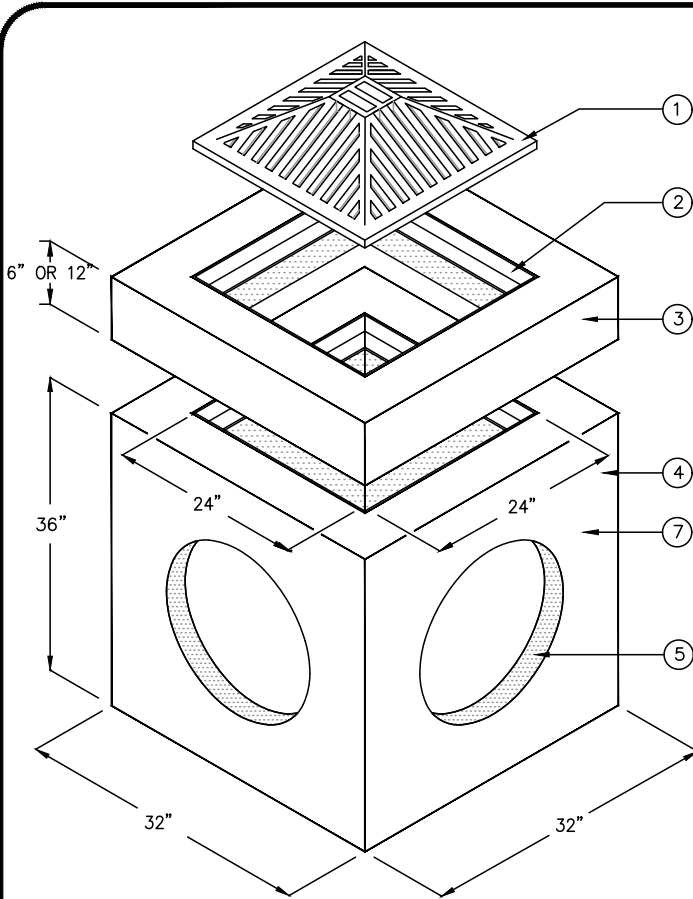
SPECIFICATIONS

- CONCRETE :** CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.
- REINFORCEMENT:** GRADE 60 REINFORCED WITH STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS:** CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

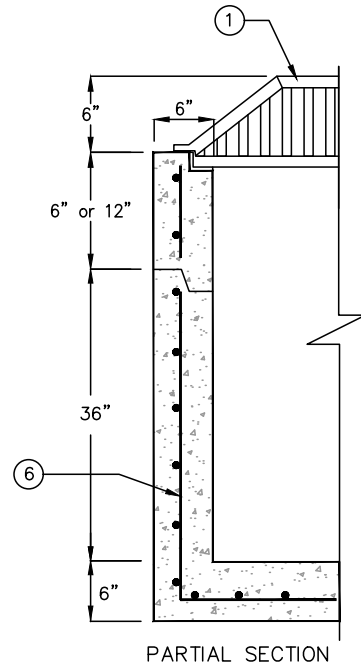
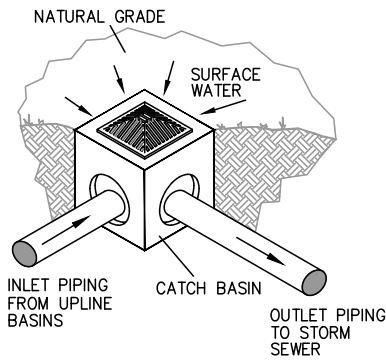


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PROJECT:			
CUSTOMER:			
ENGINEER:			
ORDER #:	PROJ #:		
DATE:	LOCATION:		
www.parkusa.com		888-611-PARK	
TYPE-A GRATE INLET MODEL CB5600 12" THRU 27"			
PM	PC	DRN	ENG
DATE	05/2019		DWG. NO.
			REV.
			CB5600-1



KEYED NOTES		
MARK	QTY	DESCRIPTION
1	1	EAST JORDAN MODEL V6500 HEAVY DUTY DITCH GRATE (WEIGHT 200 lbs.)
2	1	CAST IN STEEL FRAME
3	1	OPTIONAL EXTENSION (WEIGHT 6" 440 lbs.) (WEIGHT 12" 875 lbs.)
4	1	BASIN SECTION (WEIGHT 2700 lbs.)
5	1	24" DIAMETER KNOCK OUT (WILL ACCOMMODATE UP TO 18" RCP OR 20" PVC)
6	1	REBAR AS REQ'D
7	1	NAMEPLATE MFG: PARKUSA 888-611-PARK WWW.PARKUSA.COM MODEL CBDG6500-24




Stormwater
Quality



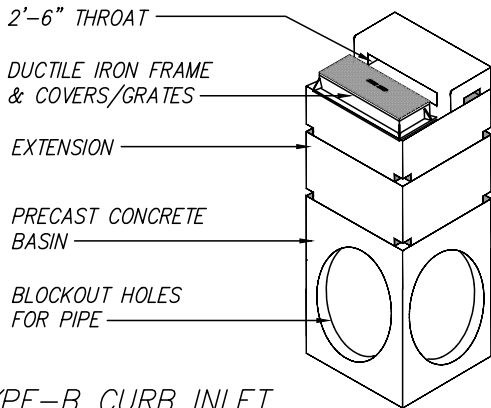
SPECIFICATIONS

- CONCRETE:** CLASS 1/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.
- REINFORCEMENT:** GRADE 60 REINFORCED. STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS:** CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

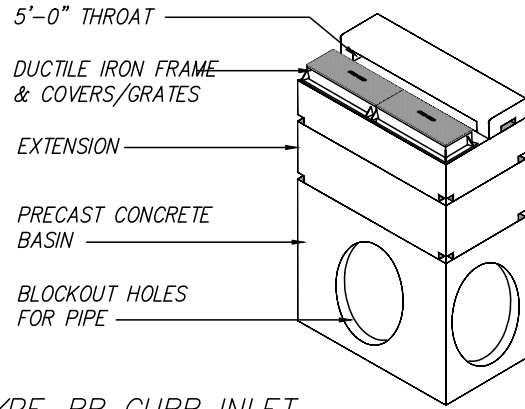
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PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: .	LOCATION: .
	
www.parkusa.com 888-611-PARK	
DITCH GRATE INLET w/ V6500 GRATE MODEL CBDG6500-24	
PM .	DRN .
PC .	ENG .
DATE 05/2019	DWG. NO. CBDG6500-24
REV. .	

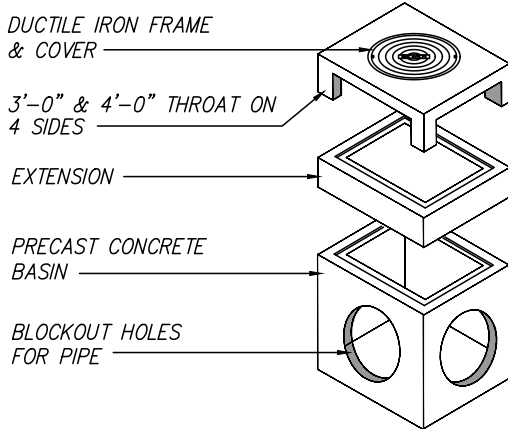
CBDG6500-24



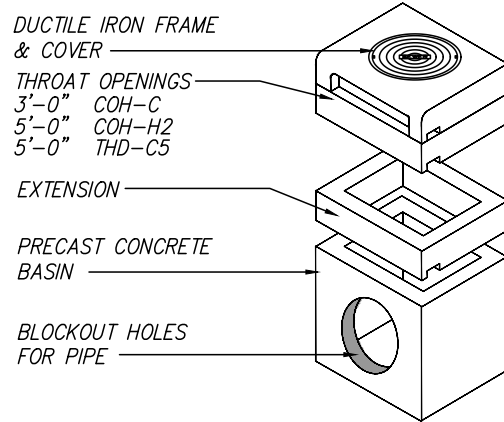
TYPE-B CURB INLET



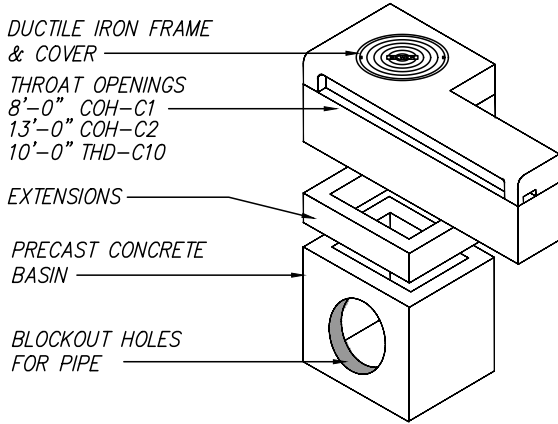
TYPE-BB CURB INLET



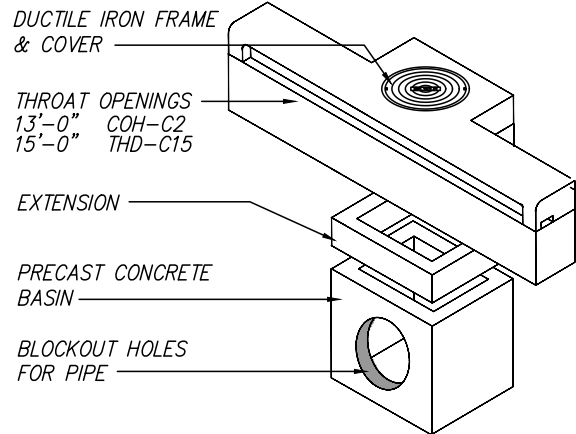
TYPE-E CURB INLET



TYPE-C, C5 & H2 CURB INLET



TYPE-C, C-1, C-10 CURB INLET



TYPE-C2, C15 CURB INLET

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SPECIFICATIONS

CONCRETE : CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.

REINFORCEMENT: GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

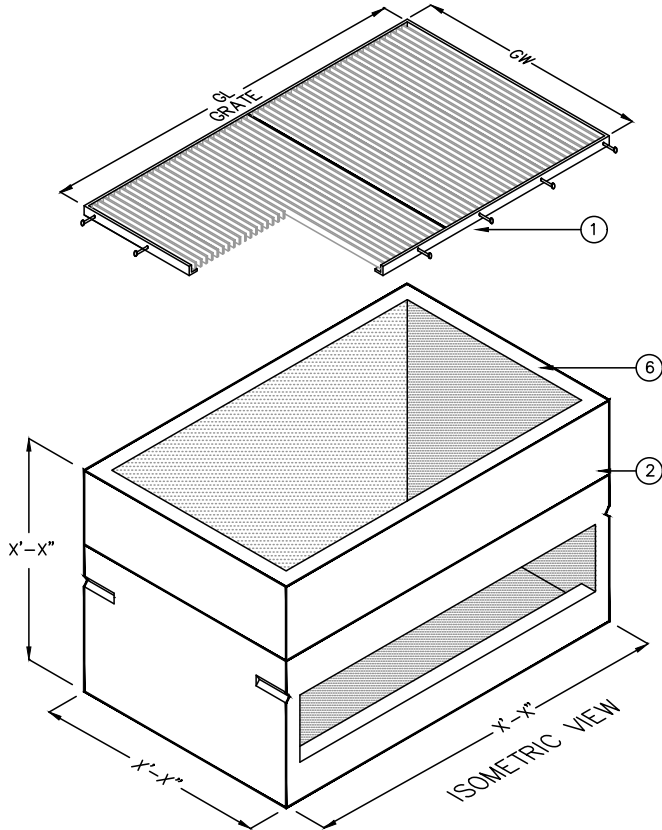


www.parkusa.com

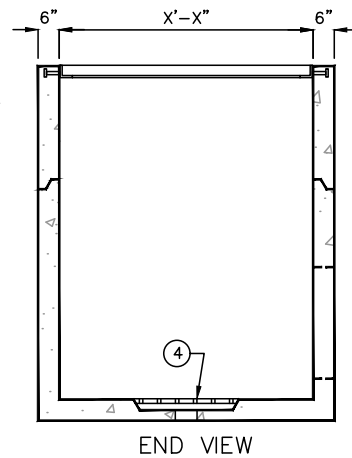
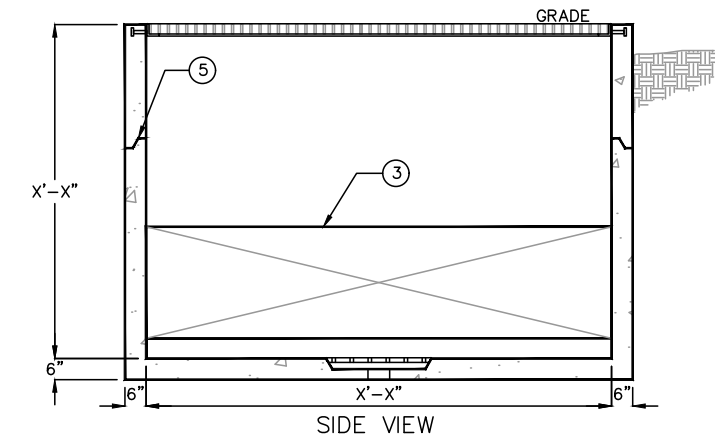
888-611-PARK

PRECAST CONCRETE CURB INLETS

PM	PC	DRN	ENG	DWG. NO.	REV.
DATE				05/2019	CBIN-1



KEYED NOTES		
MARK	QTY	DESCRIPTION
1	2	GALVANIZED BAR GRATING W/ STEEL FRAME
2	1	PRECAST CONCRETE BASIN SECTION
3	1	SLOTTED OPENING
4	1	12"x12"x3" SUMP W/ CI GRATE & PVC COUPLING
5	1	ALL JOINTS MADE WATER-TIGHT W/ PLASTIC FLEXIBLE GASKET (RAM-NEK)
6	1	NAMEPLATE MFG: PARKUSA 888-611-PARK WWW.PARKUSA.COM MODEL CB-VLT



SPECIFICATIONS

CONCRETE : CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.

REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

GRATING: ALL STEEL FABRICATION SHALL BE IN ACCORDANCE TO AWA D1.1. STEEL SHALL BE ASTM A36 CARBON STEEL, AND HOT-DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE TO ASTM A123

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PROJECT: .
CUSTOMER: .
ENGINEER: .
ORDER #: . PROJ #: .
DATE: . LOCATION: .



www.parkusa.com 888-611-PARK

CATCH BASIN-VAULT
MODEL CB-VLT

PM	PC	DRN	ENG	DWG. NO.	REV.
DATE	05/2019			CB-VLT	

Stormwater
Quality

CATCHBASIN

STORMWATER DRAINAGE

Features

- Strong and Durable Precast Construction
- Consists of Top, Riser and Bottom Stages
- Optional Knock-outs, Block-outs, Frames, Covers & Grates
- In Stock & Easy to Install
- City & State Approved Models



Catchbasins

Stormwater infrastructure exists to manage stormwater during stormwater accumulation events. Excessive stormwater can lead to flooding and potential public safety risk and property damage. Development and building projects require a properly designed drainage system to efficiently move stormwater to a public stormwater sewer. A stormwater system is made of many unique components for catchment, conveyance, detention, and quality treatment. Catchbasins and Grate Inlets are an important part of a properly designed stormwater management system.

ParkUSA® offers a wide variety of stormwater drainage products essential for all stormwater drainage applications.



SW | CATCHBASIN
Standard

Options

A catch basin can also be outfitted with optional devices to increase its pollution collection performance of debris, sediment, nutrients, and hydrocarbons.

Visit catchbasin.parkusa.com for more information and design assistance.

To request a quote or catalog, visit request.parkusa.com.

Options

When designing and building new sidewalks, streets and parking areas, a Catchbasin is used to assist in the stormwater drainage of the catchment surface area.

A Catch Basin (A) is a precast concrete box with a perforated metal grate. The catch basin (also referred to as a drop inlet) is an important component in a stormwater drainage system. It is strategically placed underground to prevent flooding of pavement, landscaping, and property. During a rain event, rainwater hits the ground (becoming stormwater) and drains towards the lowest point, the catchbasin. As stormwater flows down through the grate (B), the basin fills. A connected drainage pipe (C) then carries the water downstream. The drainage piping is placed on a progressively downward sloping gradient to encourage stormwater (D) to flow; this is also known as gravity-flow. Multiple catch basins (E) and curb inlets (F) are often used and linked with pipe to create a network of drainage points and piping; called a stormwater sewer. The stormwater finally flows off-site through its watershed of public storm sewers (G), and eventually into ditches, Saddle Inlet estuary, rivers, lakes, and oceans.



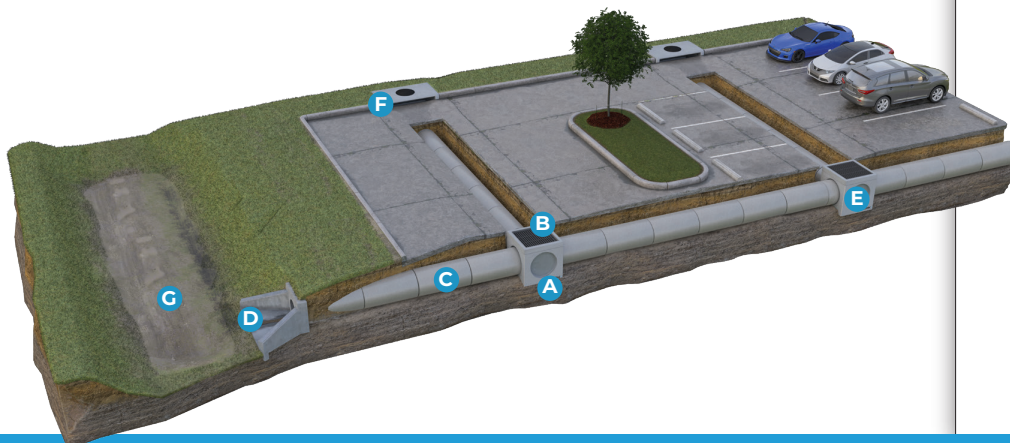
Model CB

Model A

Model CB



Saddle Inlet



APPLICATIONS



Good to use
in BMPs



Commercial



Residential



Municipal



Industrial



Low Impact
Development

STORMWATER DRAINAGE



Stormwater Infrastructure

Stormwater infrastructure exists to manage excess water during rainfall events. Excessive stormwater can lead to flooding and potential public safety risk and property damage. Development and building projects require a properly designed drainage system to effectively move stormwater to a public stormwater sewer or body of water. A stormwater sewer is a complex system made up of many unique components for catchment, conveyance, detention, and quality treatment. ParkUSA® offers a wide variety of stormwater drainage products essential for all stormwater drainage applications.

Features

- Durable precast construction
- Complete with frames and grate
- City and state approved
- In stock and easy to install
- Standard and custom designs
- Floatable Collection Screen included in Stormwater Drainage/Stormwater Infrastructure



#BUILDING AMERICA!

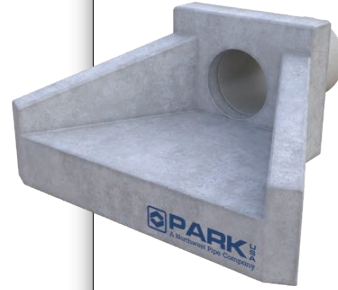
SW DRAINAGE
Standard



Model MH



Model CI



Model DSAD



Model SET



Model SIC



Model CB

How it Works

Precipitation such as rainwater or snowmelt will either soak into the ground to become groundwater, evaporate, or flow over the surface of the land. The water that flows over the ground is called stormwater or runoff and must be managed to avoid damage to existing structures and land.

Urbanized areas with buildings, roads, parking lots, or other impermeable surfaces tend to have more stormwater than undeveloped areas. Because excess stormwater can increase the potential for flooding and property damage, it is typically diverted into a stormwater drainage system called the storm sewer. During a rain event, stormwater drains from the catchment areas via grate inlets and curb inlets into a series of underground piping. This storm sewer piping is placed at a downward-sloping gradient to encourage water to flow on its own, known as "gravity-flow." The stormwater eventually flows into a stream, river, ocean, or public estuary.

Stormwater drainage infrastructures are predominantly made with unique precast concrete and field-poured components. Many of these components can be pre-engineered and factory manufactured, which offers quicker lead times, cost savings, and often better solutions.

Visit drainage.parkusa.com for more information and design assistance.

To request a quote or catalog, visit request.parkusa.com.

System Components

- Grate inlets/catch basins/trench drains
- Curb inlets
- Headwalls
- Safety end treatments (SETs)
- Manholes
- Pipe and swales
- Detention tanks
- Trash screens
- Grit and oil separators
- Nutrient treatment systems

APPLICATIONS



Good to use
in BMPs



Commercial



Residential



Municipal



Industrial



Low Impact
Development

JUNCTION BOXES



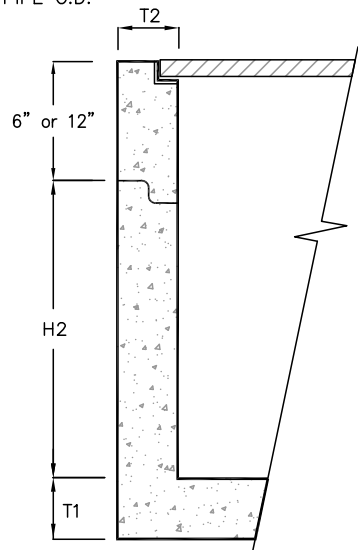
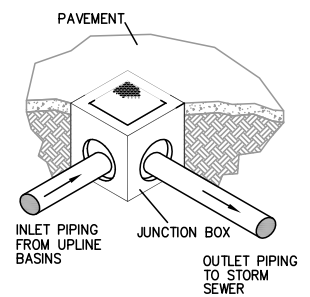
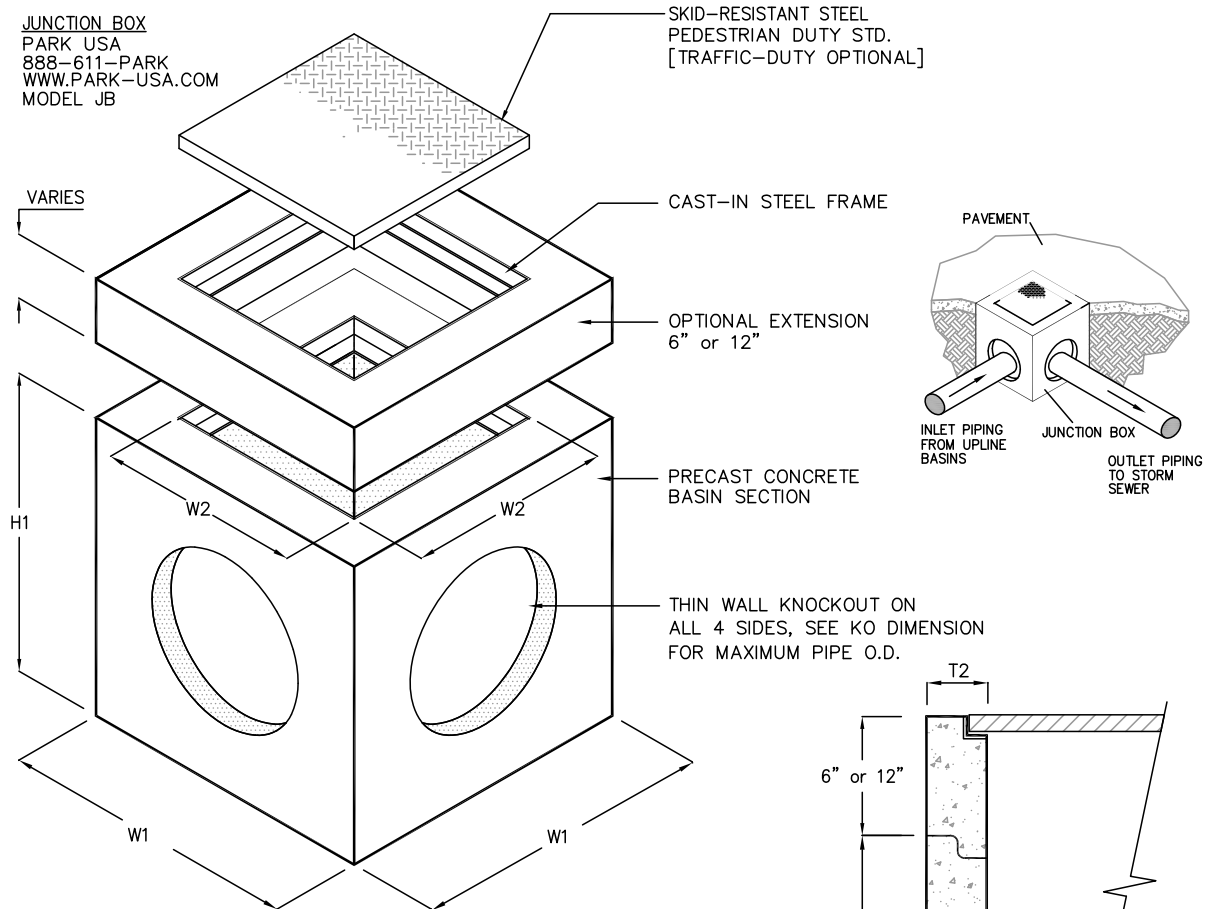
ENGINEERING FACTS

GENERAL INFORMATION

The Junction Box is a belowground round or square structure made of precast concrete. The purpose of these structures is to interconnect storm sewer or other piping together at to provide for change-in direction, joining piping of different sizes, or for sewer access and inspection. Sizes can range up to 120 inches diameter or square.



JUNCTION BOX
PARK USA
888-611-PARK
WWW.PARK-USA.COM
MODEL JB



MODEL #	DIMENSIONS								
JUNCTION BOX ¹	W1	W2	H1	H2	T1	T2	KO	GRATE SIZE	WEIGHT LBS
JB-12	15"	10"	21"	18"	3"	21"	10"	12"x12"x1"	180
JB-14	20"	14"	28"	24"	4"	3"	12"	14"x14"x1"	600
JB-18	24"	16"	34"	30"	4"	4"	15"	18"x18"x1"	1,000
JB-20	26"	18"	34"	30"	4"	4"	17"	20"x20"x1"	1,335
JB-24	32"	22"	41"	36"	5"	5"	22"	24"x24"x2"	2,245
JB-27	37"	25"	42"	36"	6"	6"	24"	27"x27"x2"	2,875
JB-30	42"	30"	42"	36"	6"	6"	30"	32"x32"x2"	3,675
JB-36	48"	36"	42"	36"	6"	6"	32"	38"x38"x2"	4,585
JB-48	60"	48"	54"	48"	6"	6"	44"	38"x38"x2"	7,395

1. ALL JUNCTION BOXES ARE STANDARD PEDESTRIAN DUTY OR OPTIONAL TRAFFIC DUTY.

PARTIAL SECTION ©Park 2016



PROJECT: _____
 CUSTOMER: _____
 ENGINEER: _____
 ORDER #: _____
 PROJ #: _____
 DATE: _____

SPECIFICATIONS

CONCRETE: Class I/II concrete with of design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.

REINFORCEMENT: Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.

COVER & FRAME: All steel fabrication shall be in accordance to AWA D1.1. Steel shall be ASTM A36 carbon steel, and hot-dipped galvanized after fabrication in accordance to ASTM A123

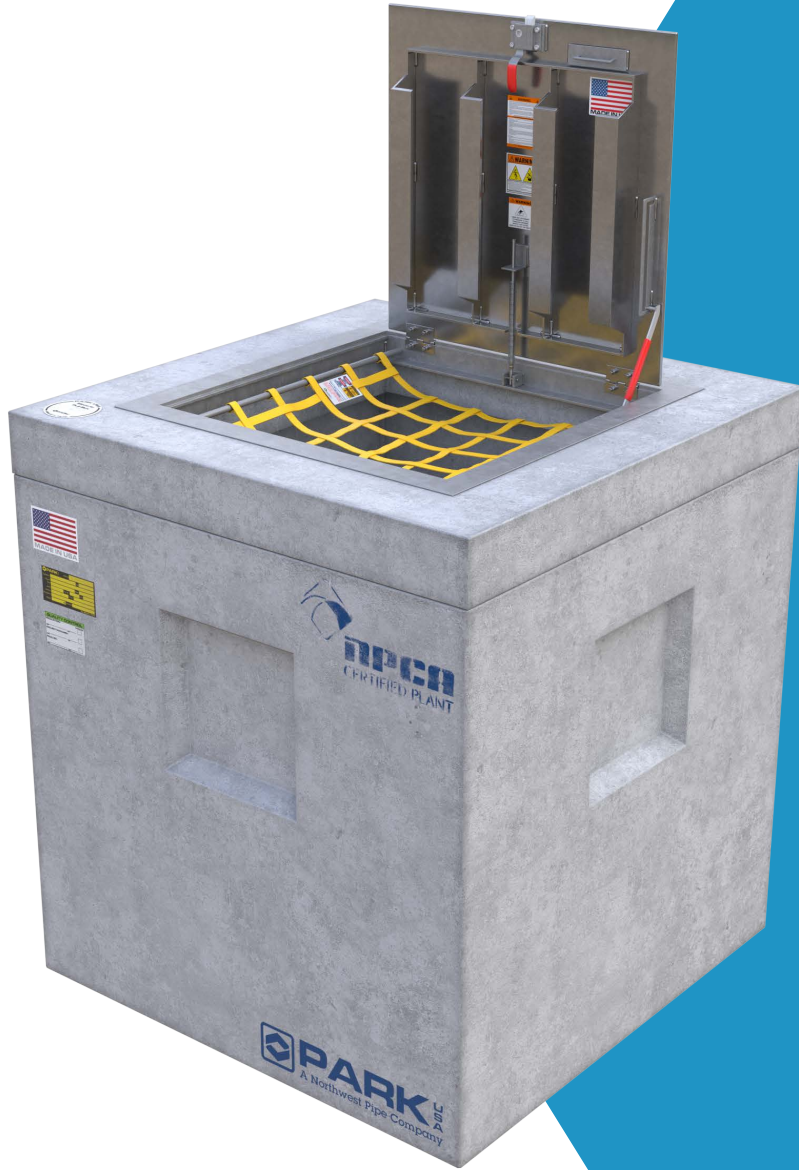
888.611.PARK
www.park-usa.com

PARK USA
DESIGN FOR WATER

JUNCTION BOX
MODEL JB - 12" THRU 48"

PM	DRN	ENG	DWG. NO.	REV.
DATE	06/16		JB-01	A

PULL BOXES

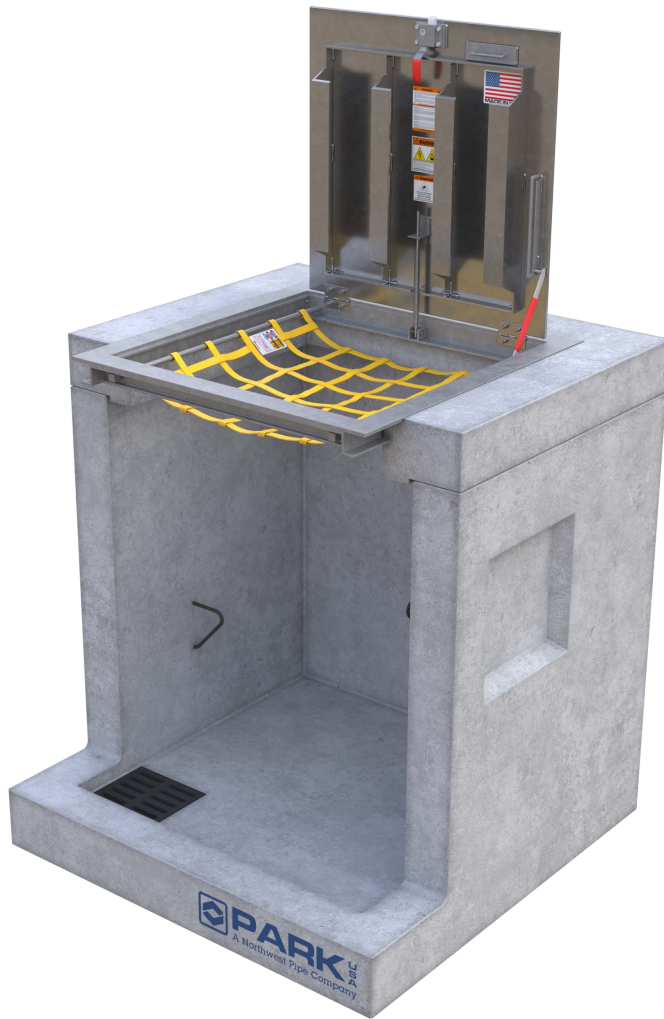


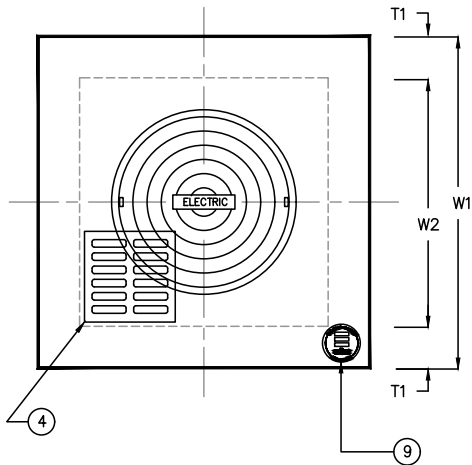

PARK
USA
A Northwest Pipe Company

ENGINEERING FACTS

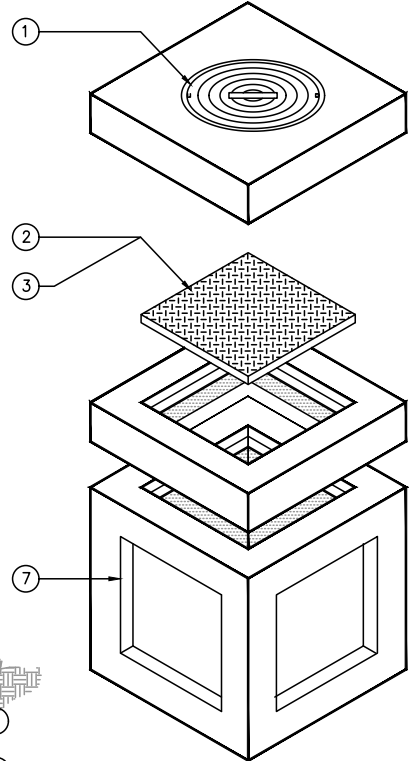
GENERAL INFORMATION

The Electrical Pull Box is a belowground square structure made of precast concrete. The purpose of these structures is to interconnect underground communications or electrical cabling and provide for underground placement of electrical switchgear equipment. The design engineer customizes pull box sizes and configurations. Available accessories include, ladders, hatchways, cable terminators, shelving, pulling irons, and sump pumps.

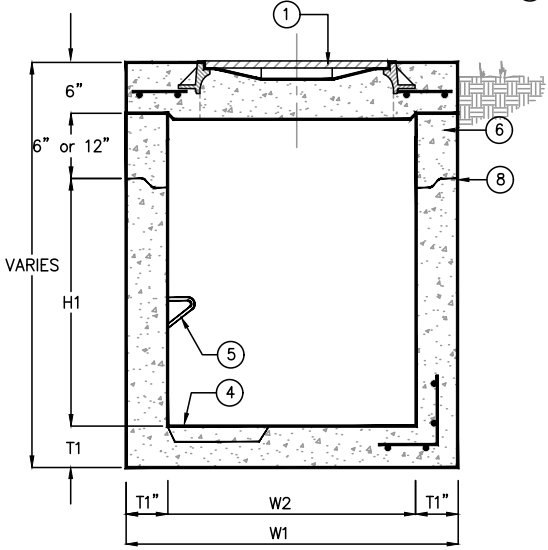




PLAN



ISOMETRIC



SECTION

KEYED NOTES		
MARK	QTY	DESCRIPTION
1	1	WATERTIGHT CAST IRON RING AND COVER. (OPTIONAL)
2	1	SKID-RESISTANT STEEL COVER & FRAME, GALV PEDESTRIAN DUTY STD. (OPTIONAL)
3	1	PEDESTRIAN OR H-20 RATED HINGED OPENING W/ SAFETY NET. (OPTIONAL)
4	1	RECESSED SUMP w/ CAST IRON GRATE
5	1	PULLING IRONS
6	1	EXTENSION AS REQ'D IN 6" & 12" INCREMENTS
7	1	THINWALL KNOCKOUTS OR TERMINATORS AS REQUIRED
8	1	JOINTS SEALED WATERTIGHT
9	1	NAMEPLATE MFG: PARKUSA 888-611-PARK WWW.PARKUSA.COM MODEL ELPB

MODEL	W1	W2	H1	T1	STD COVER SIZE	WATERTIGHT COVER SIZE	WEIGHT LBS
ELPB12	15"	10"	21"	2"	12"x12"x1"	N/A	180
ELPB18	24"	16"	30"	4"	18"x18"x1½"	N/A	1,000
ELPB20	26"	18"	36"	4"	20"x20"x1½"	N/A	1,335
ELPB24	32"	22"	48"	5"	24"x24"x2"	N/A	2,245
ELPB27	37"	25"	48"	6"	27"x27"x2"	N/A	2,875
ELPB30	42"	30"	48"	6"	32"x32"x2"	24" DIA	4,100
ELPB36	48"	36"	48"	6"	38"x38"x2"	24" DIA	6,600
ELPB48	60"	48"	48"	6"	38"x38"x2"	24" DIA	9,150
ELPB60	72"	60"	60"	6"	38"x38"x2"	30" DIA	13,650
ELPB72	84"	72"	72"	6"	38"x38"x2"	30" DIA	19,000
ELPB84	96"	84"	72"	6"	38"x38"x2"	30" DIA	23,100
ELPB96	108"	96"	72"	6"	38"x38"x2"	30" DIA	27,500

- 1. CB12 PULLBOX IS RATED FOR PEDESTRIAN LOADING ONLY
- 2. SUMP & GRATE AVAILABLE FOR PB30 THRU PB60 ONLY

- OPTIONS:
- LADDER
 - SUMP PUMP

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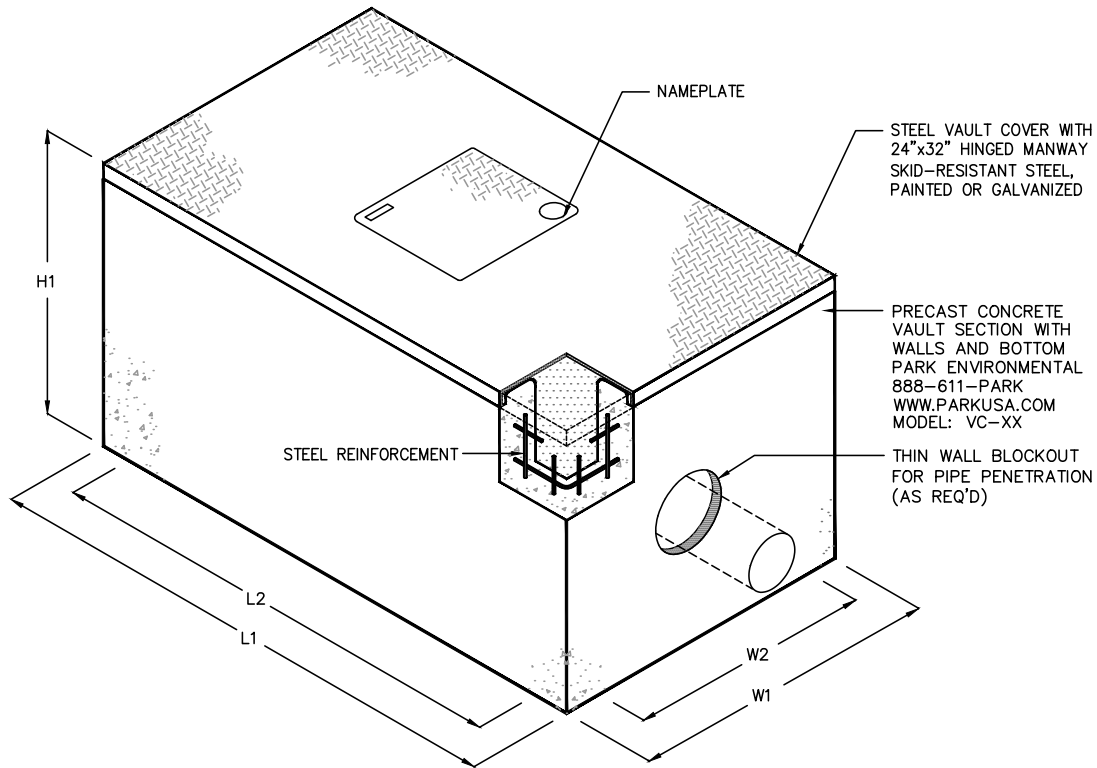
SPECIFICATIONS

CONCRETE : CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.

REINFORCEMENT: GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: .	LOCATION: .
www.parkusa.com 888-611-PARK	
PRECAST ELECTRIC PULL BOX MODEL ELPB	
PM .	PC .
DRN .	ENG .
DATE 05/2019	DWG. NO. ELPB-1
REV. .	



1 MODEL #		DIMENSIONS					WEIGHT LBS
STANDARD DUTY	HEAVY DUTY	L1	L2	W1	W2	H1	
VC-343	VC343-H	4'-0"	3'-6"	3'-0"	2'-6"	4'-0"	1,900
VC-364	VC364-H	6'-0"	5'-6"	3'-6"	3'-0"	4'-0"	3,300
VC-475	VC475-H	7'-10"	7'-2"	4'-4"	3'-8"	5'-6"	7,600
VC-483	VC583-H	8'-8"	8'-0"	5'-0"	4'-4"	3'-6"	6,100
VC-485	VC485-H	8'-8"	8'-0"	5'-0"	4'-4"	5'-6"	8,700
VC-585	VC585-H	9'-2"	8'-2"	5'-8"	4'-8"	5'-6"	14,300
VC-685	VC685-H	9'-0"	8'-0"	6'-0"	5'-0"	6'-0"	18,600
VC-5104	VC5104-H	11'-0"	10'-0"	6'-0"	5'-0"	4'-6"	14,600
VC-5106	VC5106-H	11'-0"	10'-0"	6'-0"	5'-0"	6'-6"	19,400
VC-6124	VC6124-H	13'-0"	12'-0"	7'-0"	6'-0"	4'-6"	18,200
VC-6126	VC6126-H	13'-0"	12'-0"	7'-0"	6'-0"	6'-6"	24,000
VC-6154	VC6154-H	16'-0"	15'-0"	7'-0"	6'-0"	4'-6"	23,400
VC-6156	VC6156-H	16'-0"	15'-0"	7'-0"	6'-0"	6'-6"	30,300

1. STANDARD DUTY INDICATES PEDESTRIAN LOAD RATED, HEAVY DUTY IS TRAFFIC LOAD RATED.

SPECIFICATIONS


CONCRETE : CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.

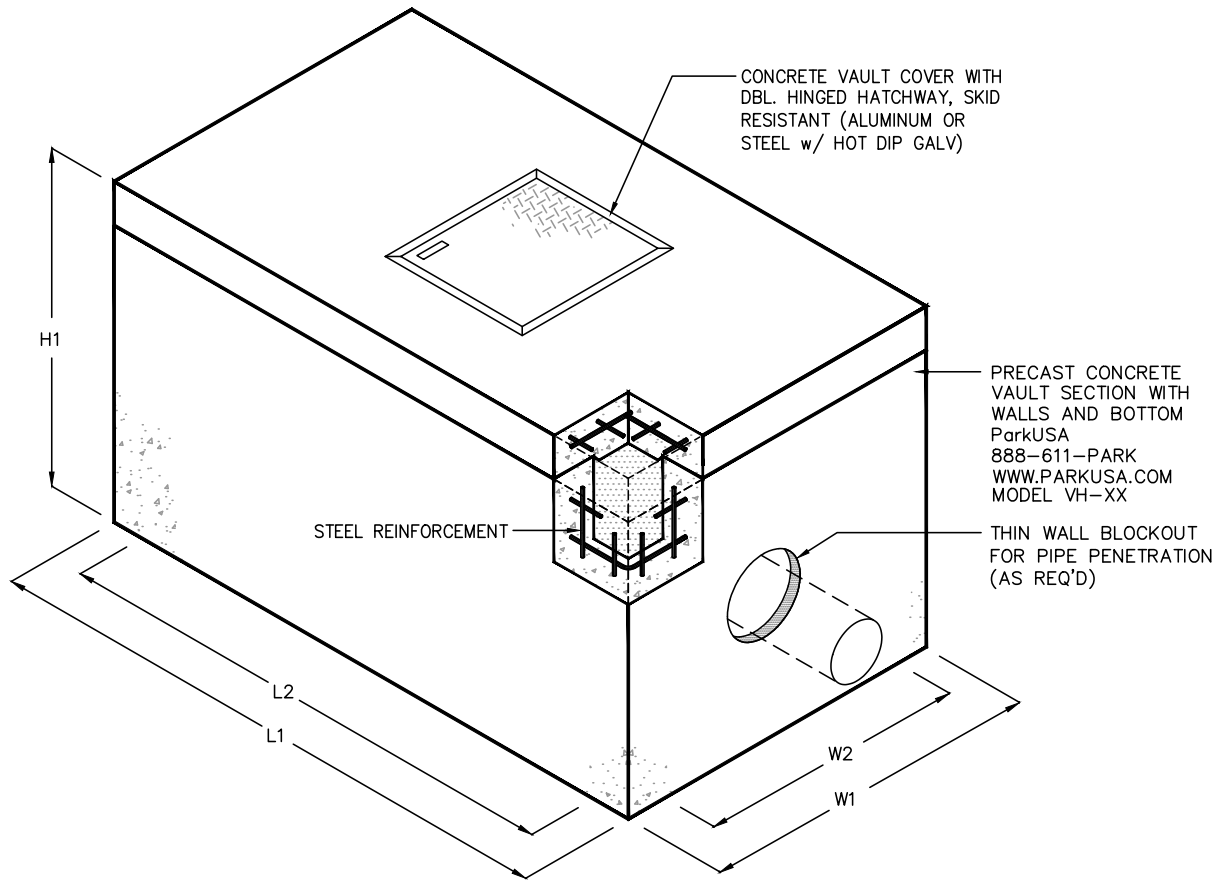
REINFORCEMENT: GRADE 60 REINFORCED. STEEL #4 REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL. BAR BENDING & PLACEMENT SHALL CONFORM TO LATEST ACI STANDARDS FOR PRECAST CONCRETE.

STEEL COVER: ALL STEEL FABRICATION SHALL BE IN ACCORDANCE TO AWA D1.1. STEEL SHALL BE ASTM A36 CARBON STEEL. FINISH IS PRIMER & PAINTED WITH INDUSTRIAL ENAMEL.



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PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: .	LOCATION: .
 <p>888.611.PARK® www.ParkUSA.com</p>	
UTILITY VAULTS w/ STEEL COVER MODEL VC 343 THRU 6156	
PM .	PC .
DRN .	ENG .
DATE 07/2018	DWG. NO. VC-1
REV. A	



1 MODEL NO.		DIMENSIONS					WEIGHT LBS
STANDARD DUTY	HEAVY DUTY	L1	L2	W1	W2	H1	
VH-343	VH343-H	4'-0"	3'-6"	3'-0"	2'-6"	3'-9"	2,800
VH-364	VH364-H	6'-0"	5'-6"	3'-0"	2'-6"	3'-9"	4,600
VH-475	VH475-H	7'-10"	7'-2"	4'-4"	3'-8"	6'-0"	10,200
VH-483	VH583-H	8'-8"	8'-0"	5'-0"	4'-4"	3'-9"	9,400
VH-485	VH485-H	8'-8"	8'-0"	5'-0"	4'-4"	6'-0"	12,000
VH-585	VH585-H	9'-2"	8'-2"	5'-8"	4'-8"	6'-0"	18,200
VH-685	VH685-H	9'-0"	8'-0"	6'-0"	5'-0"	6'-0"	18,600
VH-5104	VH5104-H	11'-0"	10'-0"	6'-0"	5'-0"	4'-9"	19,600
VH-5106	VH5106-H	11'-0"	10'-0"	6'-0"	5'-0"	7'-0"	24,400
VH-6124	VH6124-H	13'-0"	12'-0"	7'-0"	6'-0"	5'-0"	25,000
VH-6126	VH6126-H	13'-0"	12'-0"	7'-0"	6'-0"	7'-0"	30,800
VH-6154	VH6154-H	16'-0"	15'-0"	7'-0"	6'-0"	5'-0"	31,800
VH-6156	VH6156-H	16'-0"	15'-0"	7'-0"	6'-0"	7'-0"	38,700

1. STANDARD DUTY INDICATES PEDESTRIAN LOAD RATED, HEAVY DUTY IS TRAFFIC LOAD RATED.

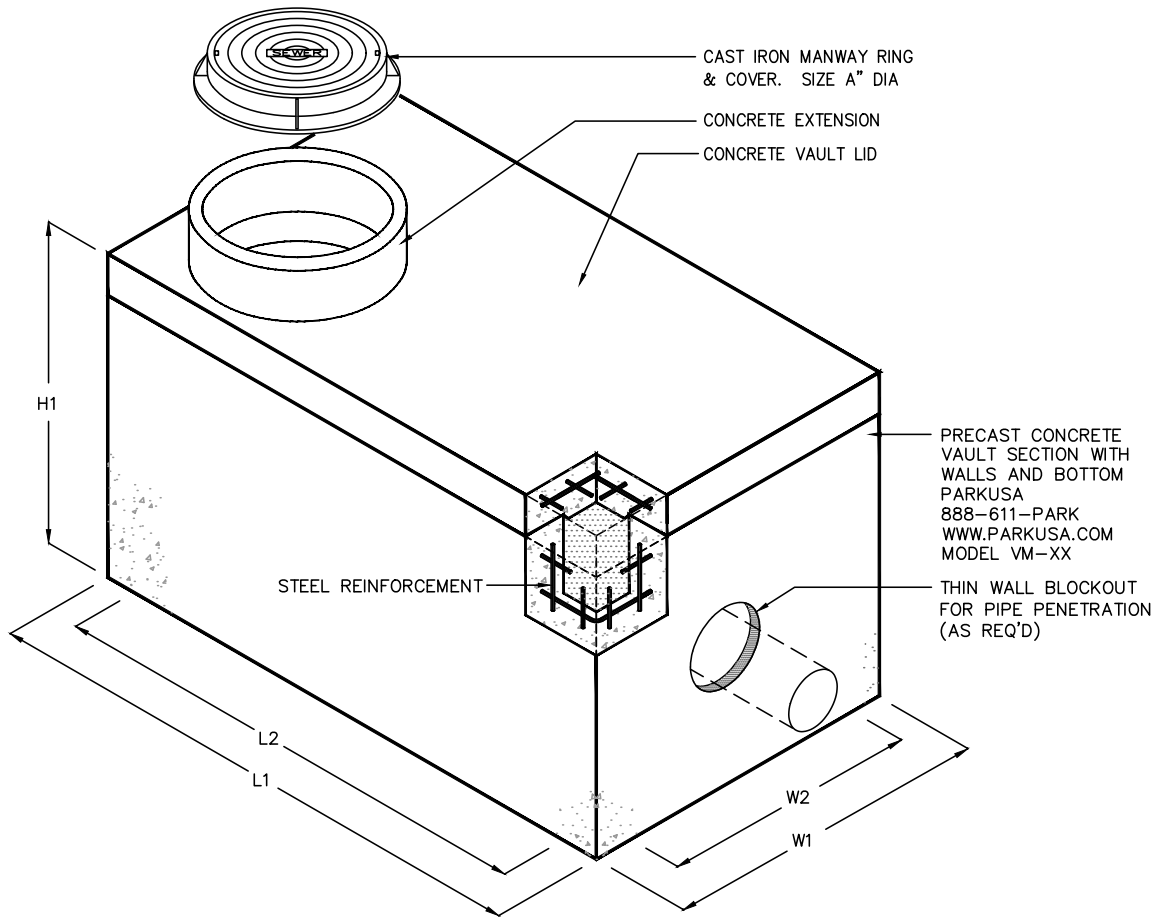
SPECIFICATIONS

- CONCRETE:** CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.
- REINFORCEMENT:** GRADE 60 REINFORCED. STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL. BAR BENDING & PLACEMENT SHALL CONFORM TO LATEST ACI STANDARDS FOR PRECAST CONCRETE.
- HATCHWAY:** 1/4" ALUMINUM SKID RESISTANT DIAMOND PLATE, WITH 1/4" EXTRUDED ALUMINUM FRAME. HATCH TO BE FURNISHED WITH DROP HANDLE, SS HINGES, & LOCKING ARM.



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PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: .	LOCATION: .
UTILITY VAULTS w/CONCRETE TOP & HATCH MODEL VH	
PM .	PC .
DRN .	ENG .
DATE 07/2018	DWG. NO. VH-1
	REV. A



1 MODEL NO.		DIMENSIONS					WEIGHT LBS
STANDARD DUTY	HEAVY DUTY	L1	L2	W1	W2	H1	
VM-343	VM343-H	4'-0"	3'-6"	3'-0"	2'-6"	3'-9"	2,800
VM-364	VM364-H	6'-0"	5'-6"	3'-0"	2'-6"	3'-9"	4,600
VM-475	VM475-H	7'-10"	7'-2"	4'-4"	3'-8"	6'-0"	10,200
VM-483	VM583-H	8'-8"	8'-0"	5'-0"	4'-4"	3'-9"	9,400
VM-485	VM485-H	8'-8"	8'-0"	5'-0"	4'-4"	6'-0"	12,000
VM-585	VM585-H	9'-2"	8'-2"	5'-8"	4'-8"	6'-0"	18,200
VM-685	VM685-H	9'-0"	8'-0"	6'-0"	5'-0"	6'-0"	18,600
VM-3105	VM3105-H	11'-0"	10'-0"	4'-0"	3'-0"	6'-0"	19,000
VM-5104	VM5104-H	11'-0"	10'-0"	6'-0"	5'-0"	5'-0"	19,600
VM-5106	VM5106-H	11'-0"	10'-0"	6'-0"	5'-0"	7'-0"	24,400
VM-6124	VM6124-H	13'-0"	12'-0"	7'-0"	6'-0"	5'-0"	25,000
VM-6126	VM6126-H	13'-0"	12'-0"	7'-0"	6'-0"	7'-0"	30,800
VM-6154	VM6154-H	16'-0"	15'-0"	7'-0"	6'-0"	5'-0"	31,800
VM-6156	VM6156-H	16'-0"	15'-0"	7'-0"	6'-0"	7'-0"	38,700

1. STANDARD DUTY INDICATES PEDESTRIAN LOAD RATED, HEAVY DUTY IS TRAFFIC LOAD RATED.

SPECIFICATIONS

- CONCRETE :** CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.
- REINFORCEMENT:** GRADE 60 REINFORCED. STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL. BAR BENDING & PLACEMENT SHALL CONFORM TO LATEST ACI STANDARDS FOR PRECAST CONCRETE.
- MANWAY :** MANHOLE FRAME AND COVER ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.



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PROJECT:	.				
CUSTOMER:	.				
ENGINEER:	.				
ORDER #:	PROJ #:	.			
DATE:	LOCATION:	.			
UTILITY VAULTS w/ CONCRETE TOP & MANWAY MODEL VM					
PM	PC	DRN	ENG	DWG. NO.	REV.
.	.	.	.	VM-1	A
DATE 07/2018					

SAFETY END TREATMENTS




PARK
USA
A Northwest Pipe Company

ENGINEERING FACTS

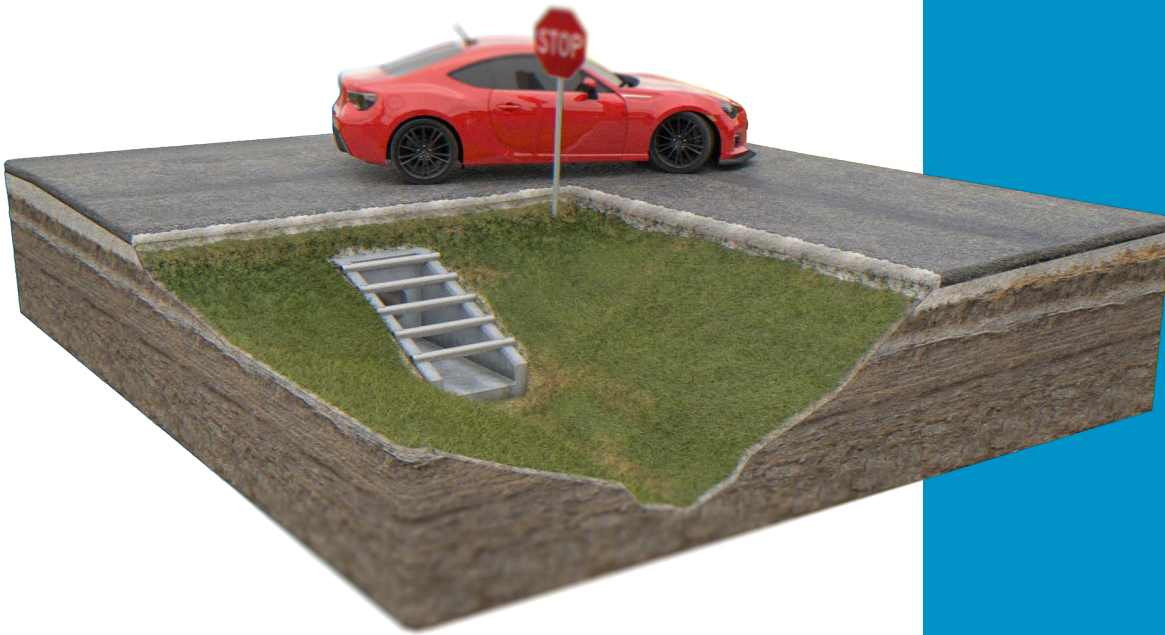
GENERAL INFORMATION

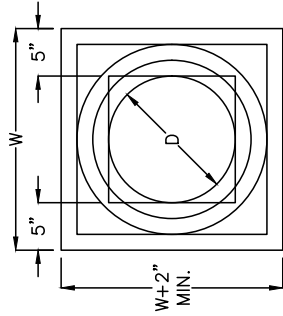
Safety End Treatment (SET) structures are a type of precast concrete retaining wall that is used along roadways to terminate stormwater piping that installed under roadways or driveways. The Safety End Treatment (SET) prevents soil erosion and help support the driveway.

Very common in rural areas, driveways that cross an open ditch require SETs. Stormwater piping is placed below these roadways or driveways to create a continuous waterway. SETs are normally installed in pairs; at the INLET and the EXIT of this piping.

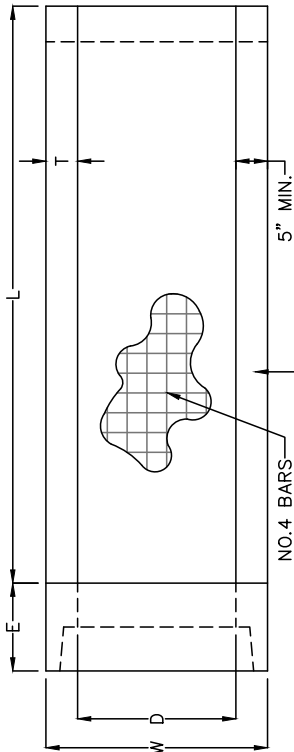
As an important safety feature, the SET can be equipped with galvanized steel rails on top of the structure to provide a safer embankment so that an out-of-control oncoming vehicle could be deflected away from the concrete structure. The SET equipped with rails saves lives. Typically, the county or the state will determine the specifications for SET structures.

Optional features for SETs include multiple pipes configurations, transverse or parallel safety rails, trash screens, and flap valves.

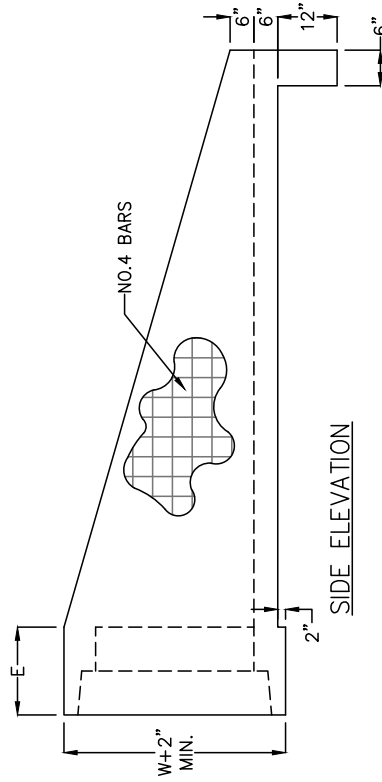




END VIEW



PLAN



SIDE ELEVATION

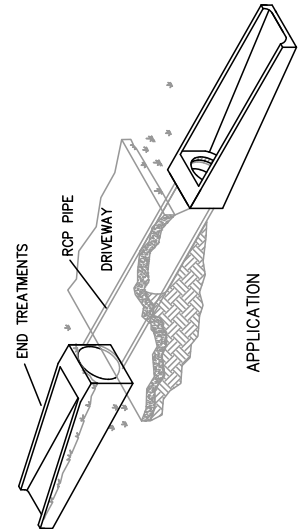
- NOTES:**
1. CLASS "C" CONCRETE
 2. 12" ARE MADE WITH 12" KNOCK OUT FOR SMALLER PIPE IN 15" SET MOLD
 3. 6" WALL IN 36" AS PER CHART
 4. REINFORCEMENT:
12" - 24" #4 BARS @ 9" X GRADE 60
24" - 36" #4 BARS @ 6" X GRADE 60
 5. REINFORCEMENT:
1" MINIMUM COVER ON ALL REINFORCEMENT

MODEL	D	SLOPE	W	L	T	E	WEIGHT
SET123	12"	3:1	1'-10"	3'-3"	5" 12"	5" 12"	1680
SET124	12"	4:1	1'-10"	4'-4"	5" 12"	5" 12"	2040
SET126	12"	6:1	1'-10"	8'-0"	5" 12"	5" 12"	2760
SET153	15"	3:1	2'-1 1/4"	4'-0"	5" 12"	5" 12"	1680
SET154	15"	4:1	2'-1 1/4"	5'-4"	5" 12"	5" 12"	2040
SET156	15"	6:1	2'-1 1/4"	8'-0"	5" 12"	5" 12"	2760
SET183	18"	3:1	2'-5 1/4"	4'-9"	5" 12"	5" 12"	2120
SET184	18"	4:1	2'-5 1/4"	6'-4"	5" 12"	5" 12"	2600
SET186	18"	6:1	2'-5 1/4"	9'-6"	5" 12"	5" 12"	3560
SET243	24"	3:1	2'-11 1/2"	6'-3"	5" 12"	5" 12"	3120
SET244	24"	4:1	2'-11 1/2"	8'-4"	5" 12"	5" 12"	3880
SET246	24"	6:1	2'-11 1/2"	12'-6"	5" 12"	5" 12"	5400
SET303	30"	3:1	3'-5 1/4"	7'-9"	5" 12"	5" 12"	4280
SET304	30"	4:1	3'-5 1/4"	10'-4"	5" 12"	5" 12"	5400
SET306	30"	6:1	3'-5 1/4"	15'-6"	5" 12"	5" 12"	7600
SET363	36"	3:1	4'-3"	10'-0"	6" 12"	6" 12"	6200
SET364	36"	4:1	4'-3"	12'-0"	6" 12"	6" 12"	9040
SET366	36"	6:1	4'-3"	18'-3"	6" 12"	6" 12"	13,000



PROJECT:
 CUSTOMER:
 ENGINEER:
 ORDER # PROJ #
 DATE LOCATION:

PARK USA
 www.parkusa.com 888-611-PARK
 SAFETY END TREATMENT
 MODEL SET - 12" THRU 36"
 DATE 05/2019 SET-1
 REV.



APPLICATION

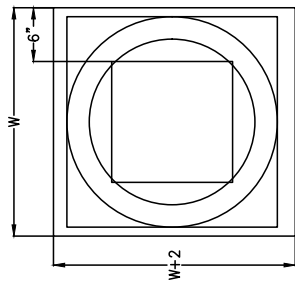
SPECIFICATIONS

CONCRETE: CLASS 1/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION INCLUDING WALLS AND FLOOR.

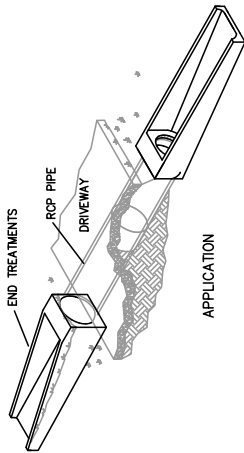
REINFORCEMENT: GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

**Stormwater
Quality**

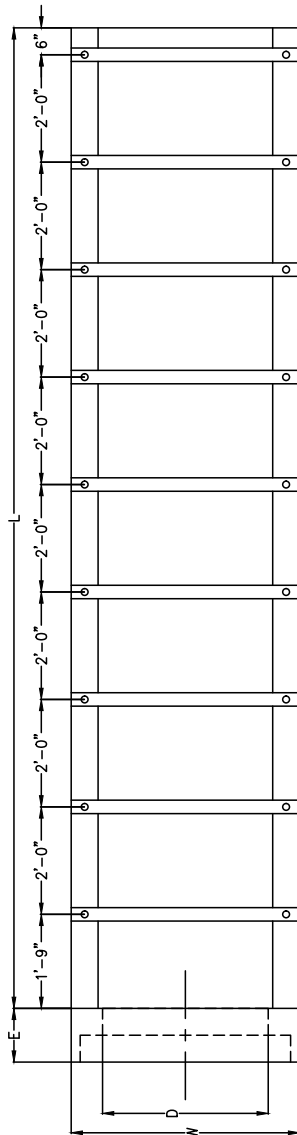
- NOTES:**
1. CLASS "C" CONCRETE
 2. 12" ARE MADE WITH 12" KNOCK OUT FOR SMALLER PIPE IN 15" SET MOLD
 3. 6" WALL IN 36" AS PER CHART
 4. REINFORCEMENT:
12"-24" #4 BARS @ 9" X GRADE 60
24"-36" #4 BARS @ 6" X GRADE 60



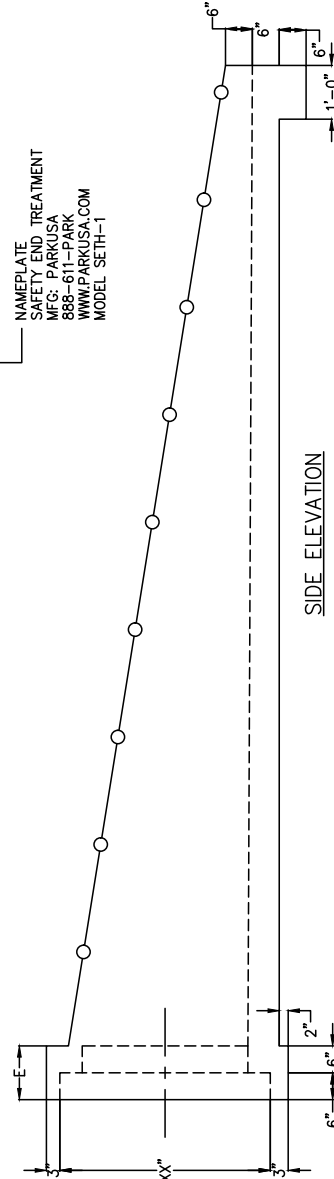
END VIEW
1" MINIMUM COVER ON ALL REINFORCEMENT



SLOPE	D	SLOPE	W	L	T	E	WEIGHT
SETH-12-3	12"	3:1	1'-10"	3'-3"	5"	12"	1680
SETH-12-4	12"	4:1	1'-10"	4'-4"	5"	12"	2040
SETH-12-6	12"	6:1	1'-10"	8'-0"	5"	12"	2760
SETH-15-3	15"	3:1	2'-1"	4'-0"	5"	12"	1680
SETH-15-4	15"	4:1	2'-1"	5'-4"	5"	12"	2040
SETH-15-6	15"	6:1	2'-1"	8'-0"	5"	12"	2760
SETH-18-3	18"	3:1	2'-5"	4'-9"	5"	12"	2120
SETH-18-4	18"	4:1	2'-5"	6'-4"	5"	12"	2600
SETH-18-6	18"	6:1	2'-5"	9'-6"	5"	12"	3560
SETH-24-4	24"	4:1	2'-11"	8'-4"	5"	12"	3880
SETH-24-6	24"	6:1	2'-11"	12'-6"	5"	12"	5400
SETH-30-3	30"	3:1	3'-5"	7'-9"	5"	12"	4280
SETH-30-4	30"	4:1	3'-5"	10'-4"	5"	12"	5400
SETH-30-6	30"	6:1	3'-5"	15'-6"	5"	12"	7600
SETH-36-3	36"	3:1	4'-3"	10'-0"	6"	12"	6200
SETH-36-4	36"	4:1	4'-3"	12'-0"	6"	12"	9040
SETH-36-6	36"	6:1	4'-3"	18'-3"	6"	12"	13,000



PLAN



SIDE ELEVATION

NAMEPLATE
SAFETY END TREATMENT
MFG: PARKUSA
888-611-PARK
WWW.PARKUSA.COM
MODEL SETH-1

PROJECT: . . .
CUSTOMER: . . .
ENGINEER: . . .
ORDER # . . .
DATE: . . .

PROJ. # . . .
LOCATION: . . .

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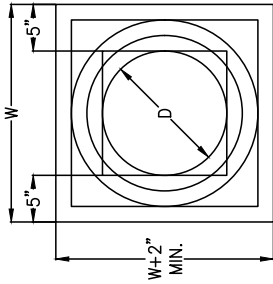
www.parkusa.com 888-611-PARK

SAFETY END TREATMENT w/ HARDWARE
MODEL SETH 12" THROUGH 36"

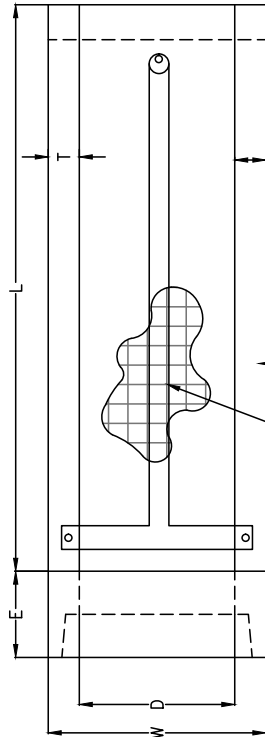
PM	PC	DRN	ENG	DWG. NO.	REV.
DATE 05/2019					SETH-1



- NOTES:**
1. CLASS "C" CONCRETE
 2. 12" ARE MADE WITH 12" KNOCK OUT FOR SMALLER PIPE IN 15" SET MOLD
 3. 6" WALL IN 36" AS PER CHART
 4. REINFORCEMENT:
12"-24" #4 BARS @ 9" X GRADE 60
24"-36" #4 BARS @ 6" X GRADE 60
 5. REINFORCEMENT:
1" MINIMUM COVER ON ALL REINFORCEMENT

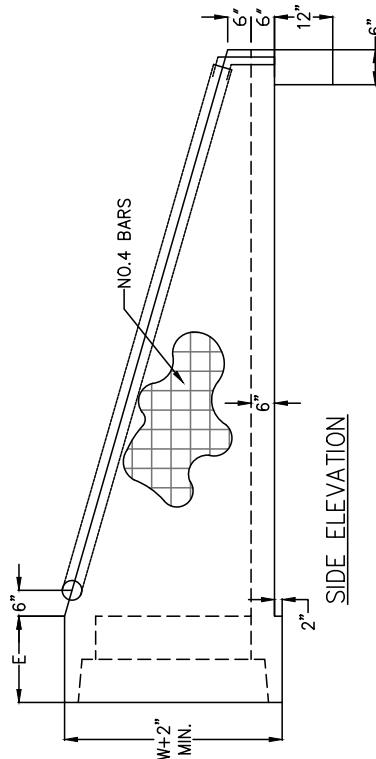


END VIEW



PLAN

SAFETY END TREATMENT
MFG: PARKUSA
888-611-PARK
WWW.PARKUSA.COM
MODEL SETHC



SIDE ELEVATION

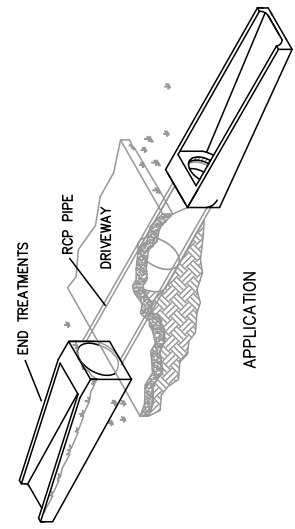
SLOPE	D	SLOPE	W	L	T	E	WEIGHT
SETHC-12-3	12"	3:1	1'-10"	3'-3"	5"	12"	1680
SETHC-12-4	12"	4:1	1'-10"	4'-4"	5"	12"	2040
SETHC-12-6	12"	6:1	1'-10"	8'-0"	5"	12"	2760
SETHC-15-3	15"	3:1	2'-1"	4'-0"	5"	12"	1680
SETHC-15-4	15"	4:1	2'-1"	5'-4"	5"	12"	2040
SETHC-15-6	15"	6:1	2'-1"	8'-0"	5"	12"	2760
SETHC-18-3	18"	3:1	2'-5"	4'-9"	5"	12"	2120
SETHC-18-4	18"	4:1	2'-5"	6'-4"	5"	12"	2600
SETHC-18-6	18"	6:1	2'-5"	9'-6"	5"	12"	3560
SETHC-24-3	24"	3:1	2'-11"	6'-3"	5"	12"	3120
SETHC-24-4	24"	4:1	2'-11"	8'-4"	5"	12"	3880
SETHC-24-6	24"	6:1	2'-11"	12'-6"	5"	12"	5400
SETHC-30-3	30"	3:1	3'-5"	7'-9"	5"	12"	4280
SETHC-30-4	30"	4:1	3'-5"	10'-4"	5"	12"	5400
SETHC-30-6	30"	6:1	3'-5"	15'-6"	5"	12"	7600
SETHC-36-3	36"	3:1	4'-3"	10'-0"	6"	12"	6200
SETHC-36-4	36"	4:1	4'-3"	12'-0"	6"	12"	9040
SETHC-36-6	36"	6:1	4'-3"	18'-3"	6"	12"	13,000



PROJECT: . . .
 CUSTOMER: . . .
 ENGINEER: . . .
 ORDER # . . . PROJ # . . .
 DATE . . . LOCATION: . . .



www.parkusa.com 888-611-PARK
 SAFETY END TREATMENT w/ HARDWARE
 MODEL SETHC 12" THROUGH 36"
 PM PC DRN ENG DWG. NO. SETHC-1
 DATE 05/2019 REV.



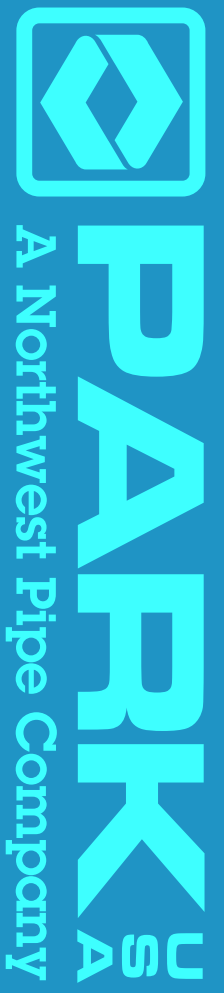
SPECIFICATIONS

CONCRETE: CLASS 1/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION INCLUDING WALLS AND FLOOR.

REINFORCEMENT: GRADE 60 REINFORCED, NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

**Stormwater
Quality**

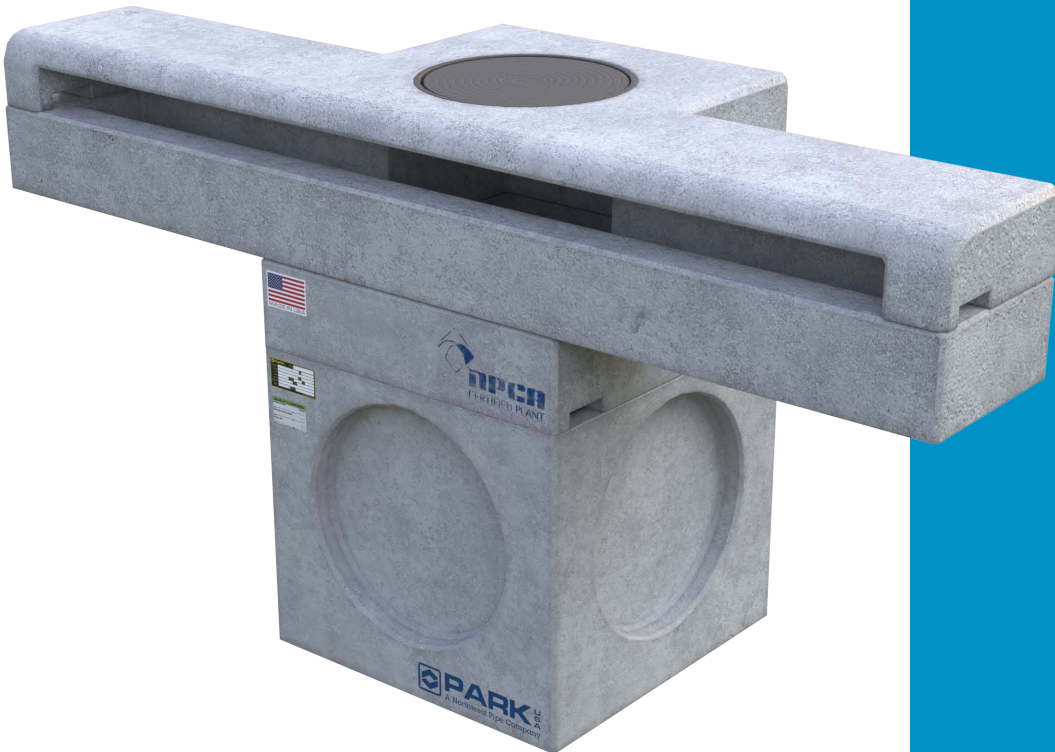
CURB INLETS

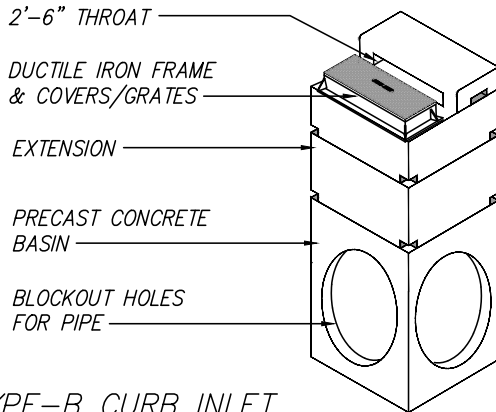


ENGINEERING FACTS

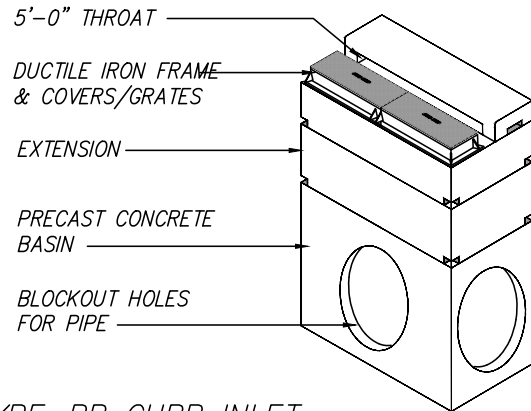
GENERAL INFORMATION

When designing and building new streets and parking areas, a Curb Inlet is used to assist in the stormwater drainage of the street surface area. The Curb Inlet is typically a below ground box structure with a vertical throat opening at the street level. As the name implies, the opening is placed in the curb perimeter of the paved surface area. Also at the street level, is an iron access cover (often referred to as a "manhole cover"). During a rain event, stormwater drains from the street paved area into the throat opening of the Curb Inlet. This water then drains into a sewer pipe that is connected to the Curb Inlet box structure. The stormwater sewer piping is placed at a downward sloping gradient to encourage water to flow through the piping; this is also known as "gravity-flow". The stormwater eventually flows into a stream, river, ocean or type of public estuary.

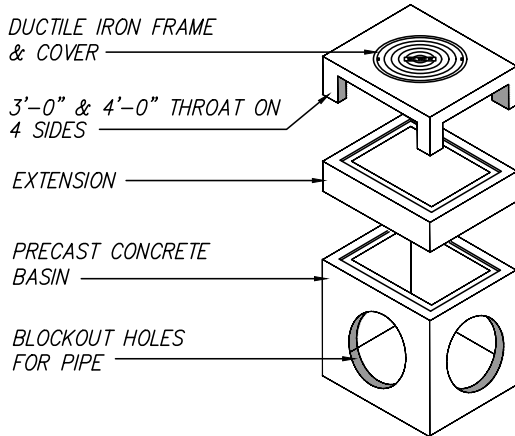




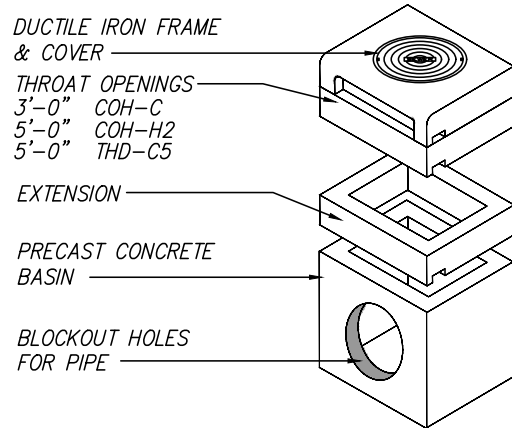
TYPE-B CURB INLET



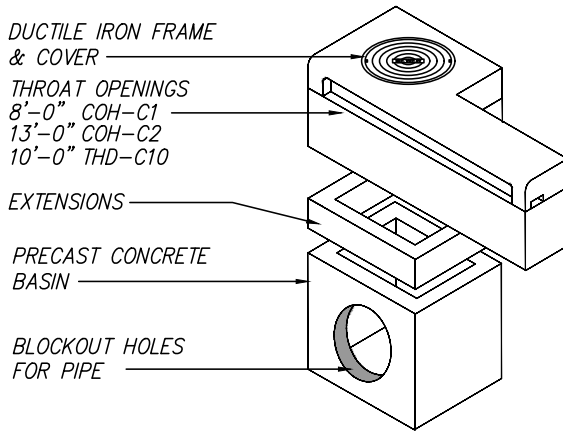
TYPE-BB CURB INLET



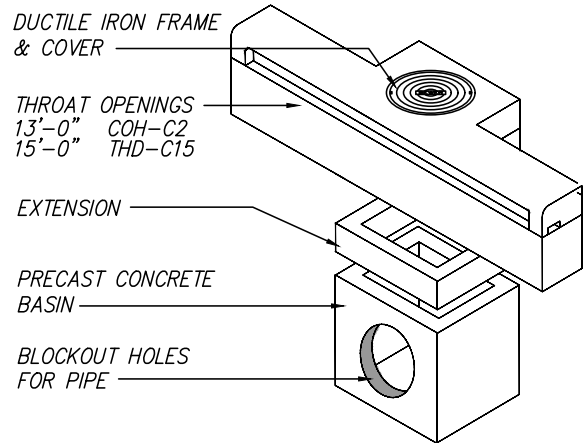
TYPE-E CURB INLET



TYPE-C, C5 & H2 CURB INLET



TYPE-C, C-1, C-10 CURB INLET



TYPE-C2, C15 CURB INLET

SPECIFICATIONS

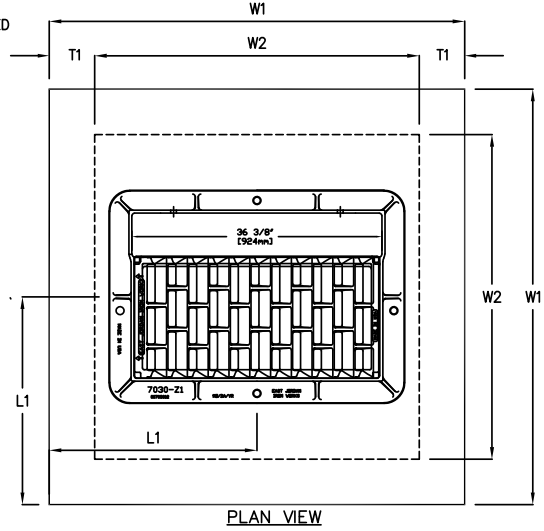
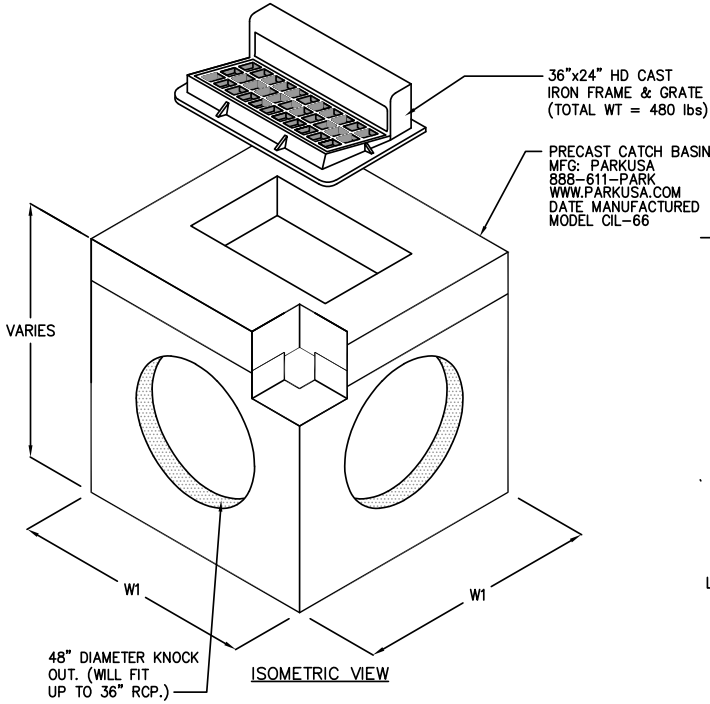
- CONCRETE : CLASS 1/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. RATED FOR H-20 LOADING.
- REINFORCEMENT: STRUCTURAL REINFORCEMENT CONFORMING TO ASTM-C-478.
- C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.



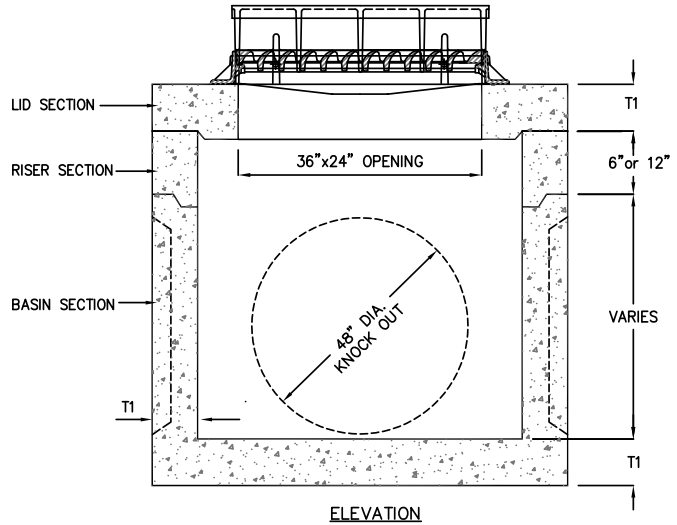
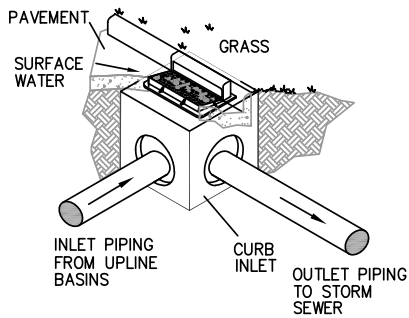
PRECAST CONCRETE CURB INLETS

PM	PC	DRN	ENG	DWG. NO.	REV.
				CI-1	A
DATE 07/2018					

APPROVED CITIES:
NORTH TEXAS



MODEL	W1	W2	L1	T1
CIL-44	5'	4'	2'6"	6"
CIL-66	7'	6'	3'6"	6"

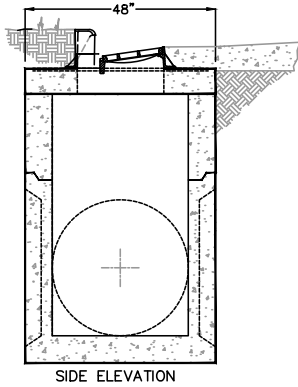
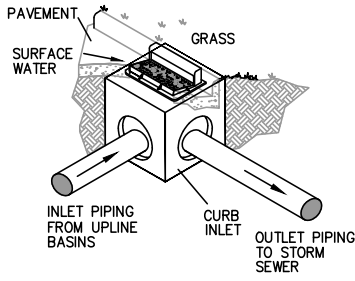


SPECIFICATIONS

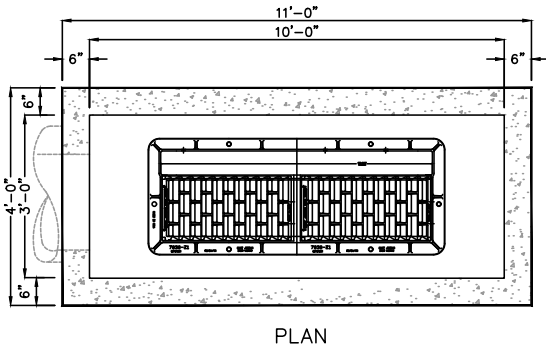
- CONCRETE :** CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.
- REINFORCEMENT:** GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS:** CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

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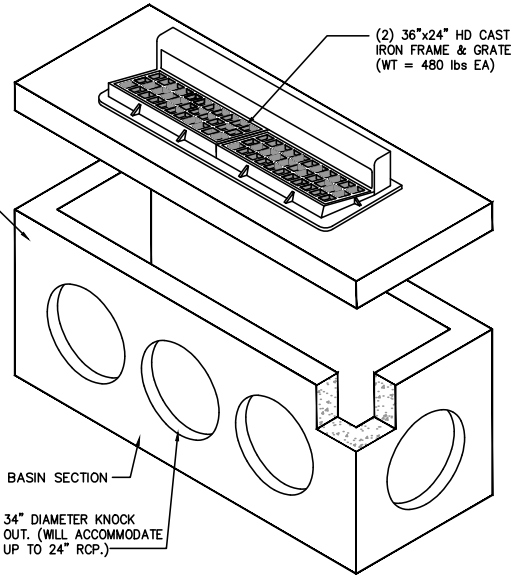
PROJECT:					
CUSTOMER:					
ENGINEER:					
ORDER #:	PROJ #:				
DATE:	LOCATION:				
CURB INLET MODEL CIL-66					
PM	PC	DRN	ENG	DWG. NO.	REV.
DATE	01/2018			CIL-1	A



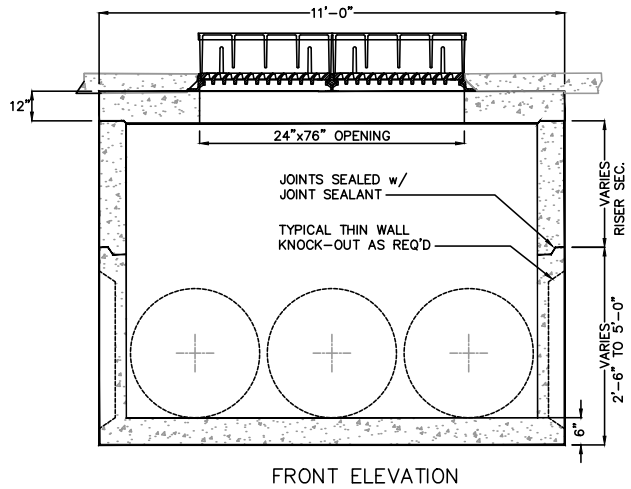
APPROVED CITIES:
NORTH TEXAS



PRECAST CATCH BASIN
PARK USA
888-611-PARK
WWW.PARKUSA.COM
DATE MANUFACTURED
MODEL CIL-2



ISOMETRIC



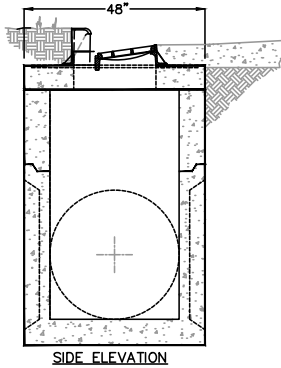
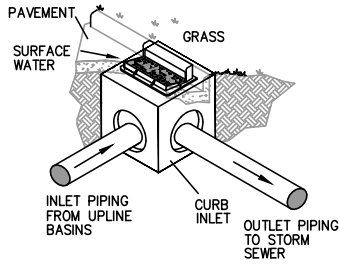
SPECIFICATIONS

- CONCRETE :** CLASS 1/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.
- REINFORCEMENT:** GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS:** CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

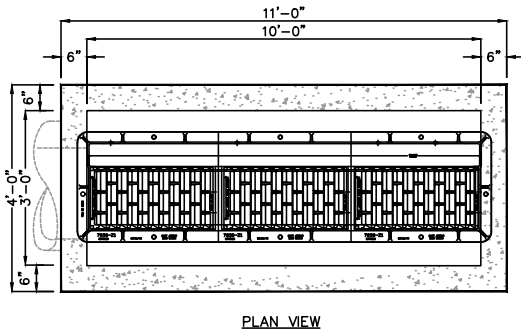
© ParkUSA. ALL RIGHTS RESERVED.

PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: .	LOCATION: .
2-GRATE CURB INLET MODEL CIL-2	
PM .	DRN .
PC .	ENG .
DWG. NO. CIL-2	
DATE 07/2018	REV. A

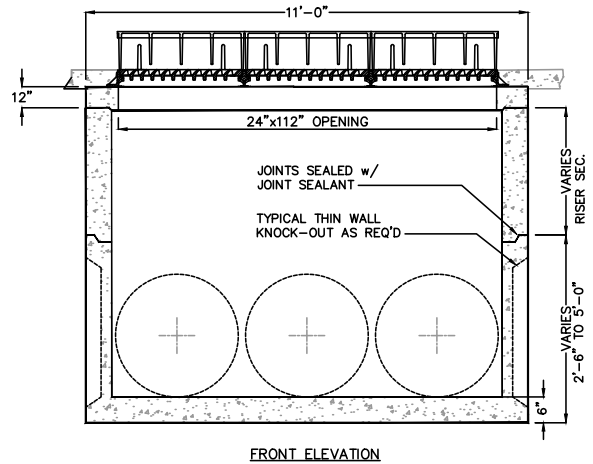
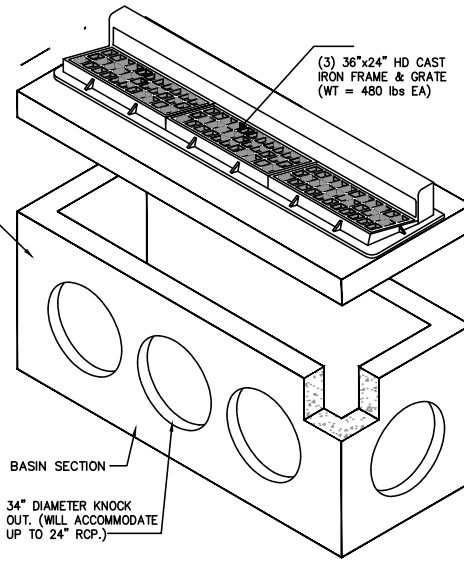
Stormwater Quality



APPROVED FOR
NORTH TEXAS



PRECAST CATCH BASIN
PARK USA
888-611-PARK
WWW.PARKUSA.COM
DATE MANUFACTURED
MODEL CIL-3




SPECIFICATIONS

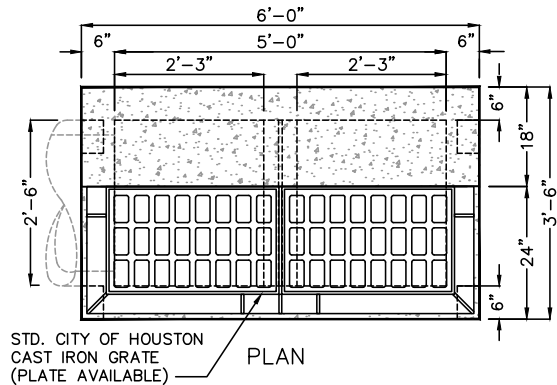
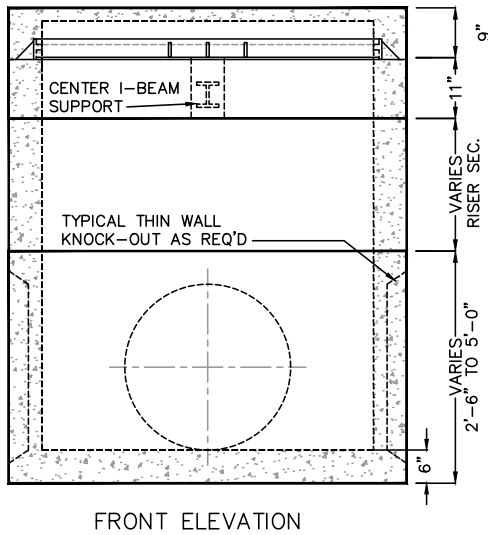
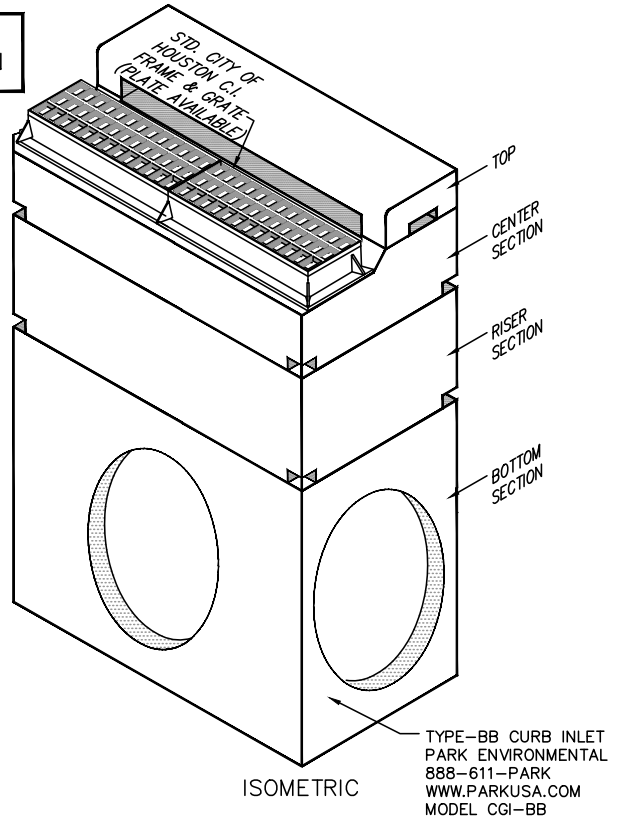
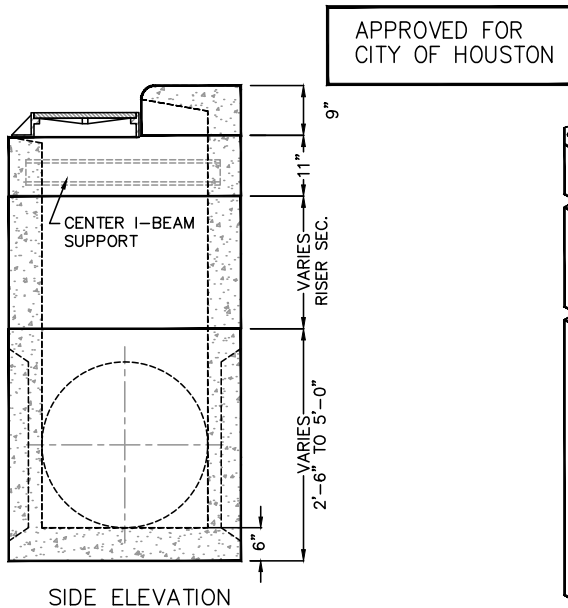
CONCRETE : CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.

REINFORCEMENT: GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

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PROJECT: .			
CUSTOMER: .			
ENGINEER: .			
ORDER #:	PROJ #:		
DATE:	LOCATION: .		
			
3-GRATE CURB INLET MODEL CIL-3			
PM	PC	DRN	ENG
DWG. NO.			REV.
DATE 07/2018			CIL-3
			A



SPECIFICATIONS

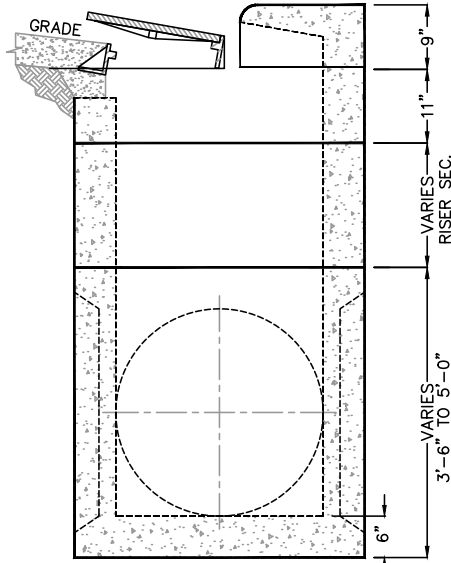
CONCRETE : CLASS 1/1 CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.

REINFORCEMENT: GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

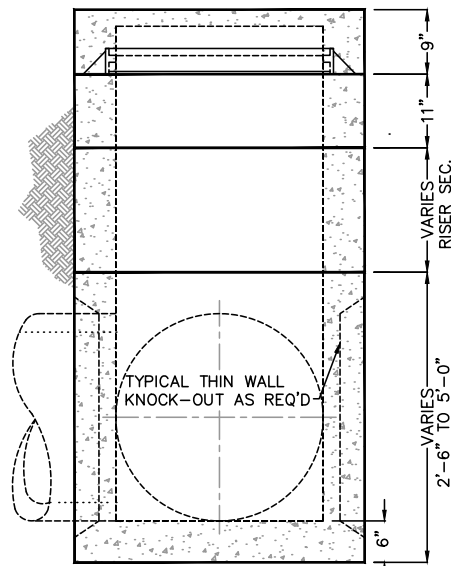
C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

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PROJECT: .					
CUSTOMER: .					
ENGINEER: .					
ORDER #: .	PROJ #: .				
DATE: .	LOCATION: .				
TYPE-BB CURB INLET-GRATES CITY OF HOUSTON - MODEL CGI-BB					
PM	PC	DRN	ENG	DWG. NO.	REV.
DATE	07/2018			CGI-BB	A

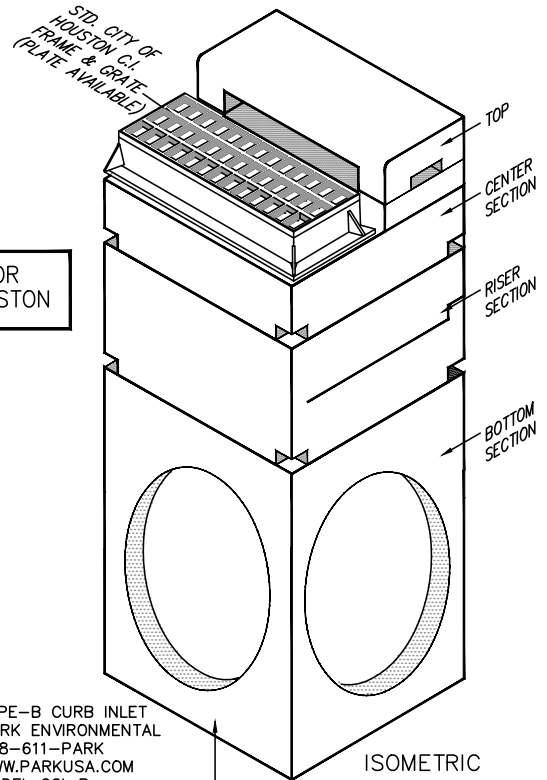


SIDE ELEVATION



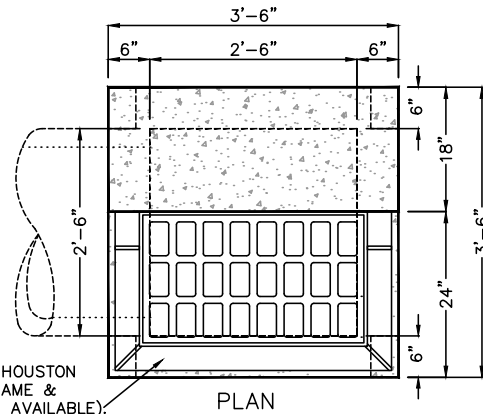
FRONT ELEVATION

APPROVED FOR
CITY OF HOUSTON



ISOMETRIC

TYPE-B CURB INLET
PARK ENVIRONMENTAL
888-611-PARK
WWW.PARKUSA.COM
MODEL CGI-B



PLAN

STD. CITY OF HOUSTON
CAST IRON FRAME &
GRATE (PLATE AVAILABLE).

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SPECIFICATIONS

- CONCRETE :** CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.
- REINFORCEMENT:** GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS:** CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

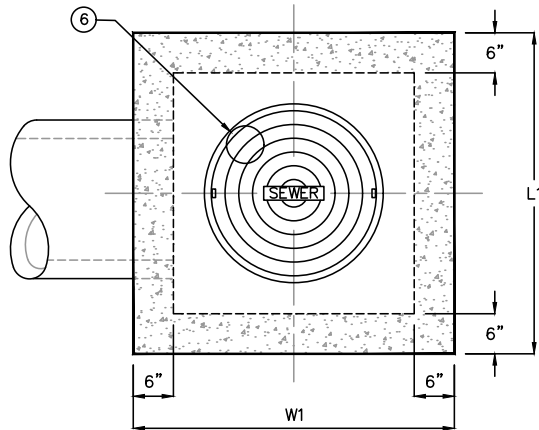
PROJECT:	.
CUSTOMER:	.
ENGINEER:	.
ORDER #:	PROJ #:
DATE:	LOCATION:

888.611.PARK®

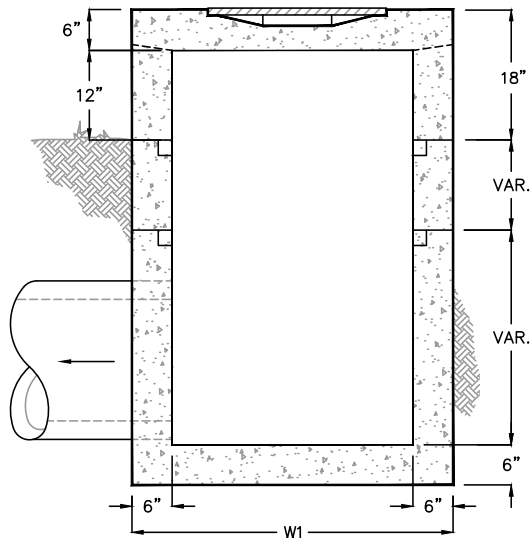
PARK
www.ParkUSA.com

TYPE-B CURB INLET w/GRATE
CITY OF HOUSTON - MODEL CGI-B

PM	PC	DRN	ENG	DWG. NO.	REV.
.	.	.	.	CGI-B	A
DATE 07/2018					



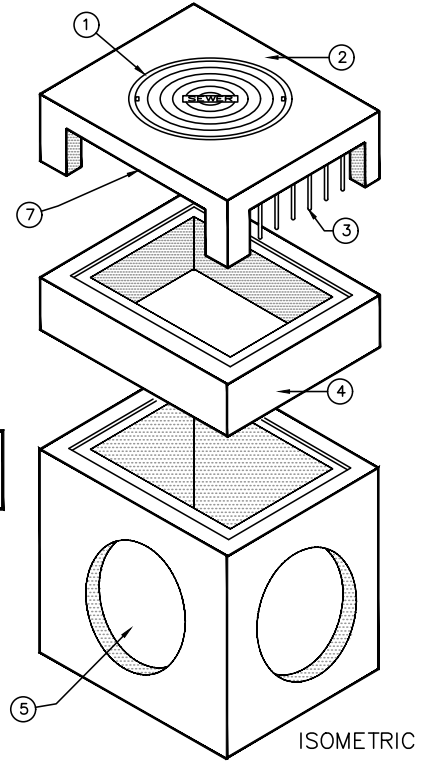
PLAN



SECTION

TYPE	L1	W1	K
E-3'	4'-0"	4'-0"	32"
E-4'	5'-0"	5'-0"	48"

APPROVED FOR
CITY OF HOUSTON



ISOMETRIC

KEYED NOTES		
MARK	QTY	DESCRIPTION
1	1	CAST IN "CITY OF HOUSTON" FRAME & COVER
2	1	TOP SECTION
3	-	SAFETY BARS (OPTIONAL)
4	1	MID SECTION
5	4	THIN WALL KNOCKOUT ON ALL 4 SIDES, SEE KO DIMENSION FOR MAXIMUM PIPE O.D.
6	1	NAMEPLATE INDICATING: MFG: PARKUSA 888-611-PARK WWW.PARKUSA.COM MODEL: AI-E DATE MANUFACTURED
7	-	OPENINGS OPTIONAL ALL FOUR SIDES (VERTICAL REBAR GRATE IF REQUIRED)



SPECIFICATIONS

CONCRETE : CLASS 1/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.

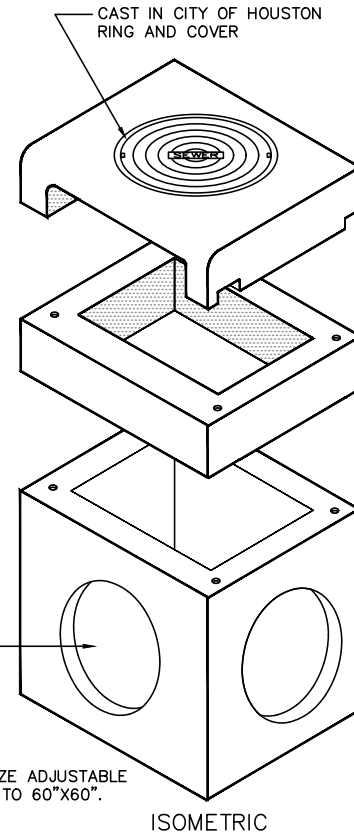
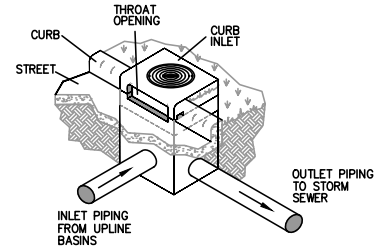
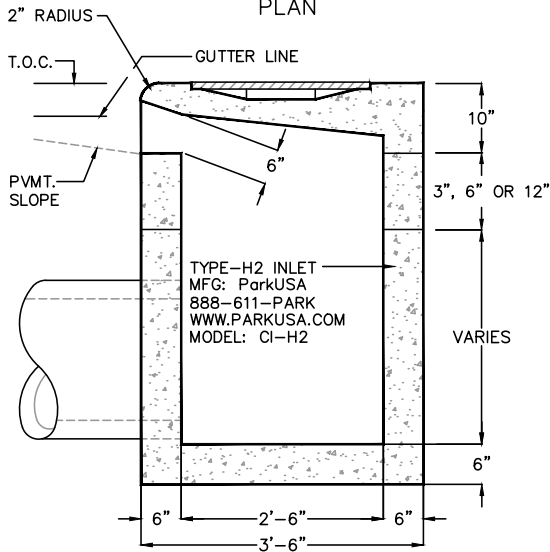
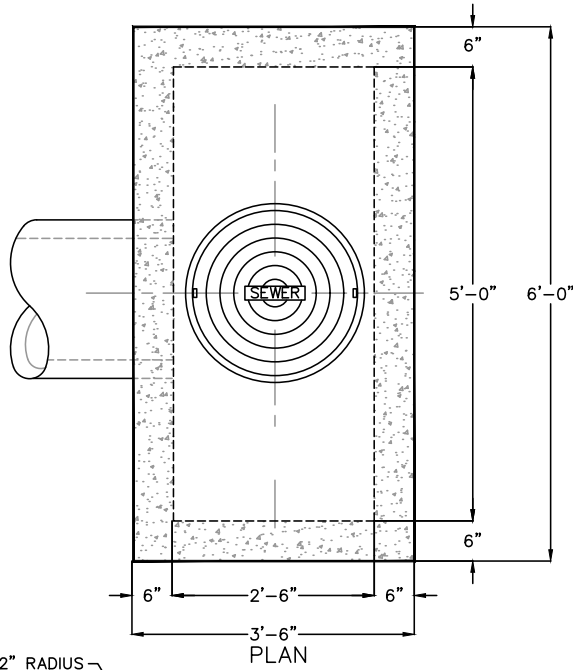
REINFORCEMENT: GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

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PROJECT: .					
CUSTOMER: .					
ENGINEER: .					
ORDER #:	PROJ #:				
DATE:	LOCATION: .				
TYPE-E AREA INLET CITY OF HOUSTON - MODEL AI-E					
PM	PC	DRN	ENG	DWG. NO.	REV.
AI-E				AI-E	A
DATE 07/2018					


Stormwater
Quality

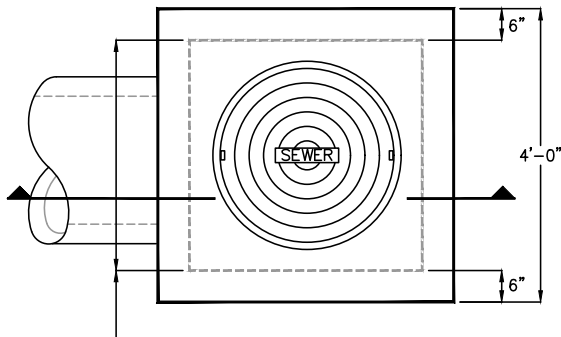


SPECIFICATIONS

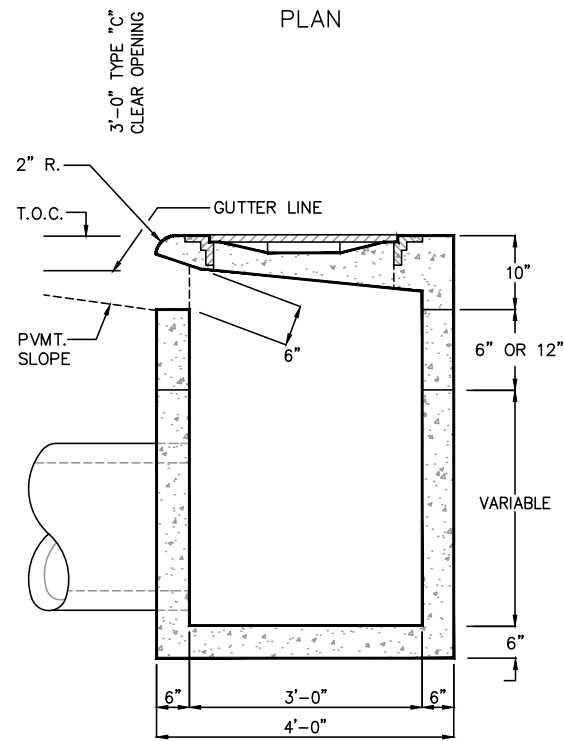
- CONCRETE :** CLASS II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.
- REINFORCEMENT:** GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS:** CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

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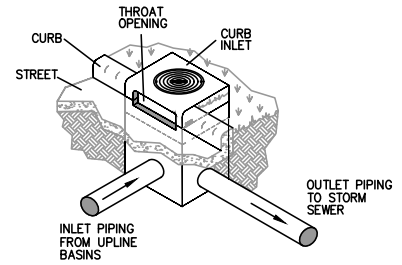
PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: .	LOCATION: .
 888.611.PARK PARK www.ParkUSA.com	
TYPE-H2 CURB INLET CITY OF HOUSTON - MODEL CI-H2	
PM .	PC .
DRN .	ENG .
DATE 07/2018	DWG. NO. CI-H2
REV. A	



PLAN



SECTION



APPLICATION

TYPE-C CURB INLET
PARK USA
888-611-PARK
WWW.PARKUSA.COM
MODEL CI-C

24" DIA CAST IRON FRAME
& COVER AS REQUIRED

TOP SECTION

RISERS AS
REQUIRED

THINWALL
KNOCKOUTS

BOTTOM SECTION

ISOMETRIC

NOTES:

- SOME INLETS MAY USE COMBINATION OF TOP SECTION ONLY/TOP + CENTER SECTION/ OR TOP + CENTER + BOTTOM SECTION, DEPENDING ON INLET DEPTH.

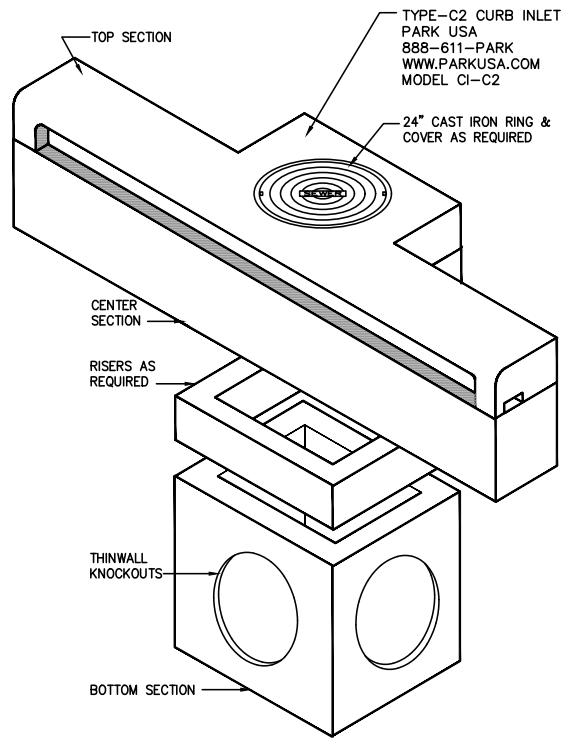
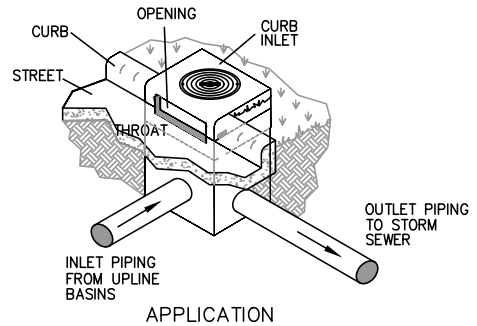
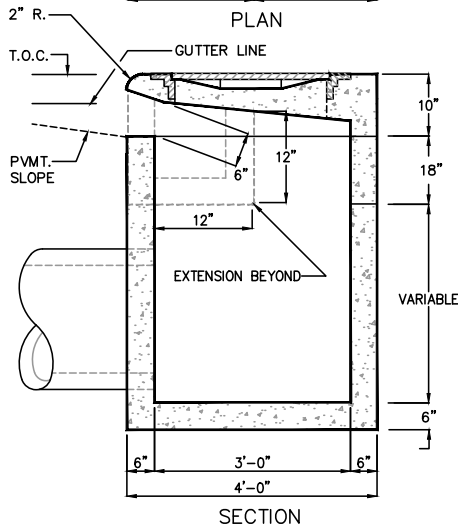
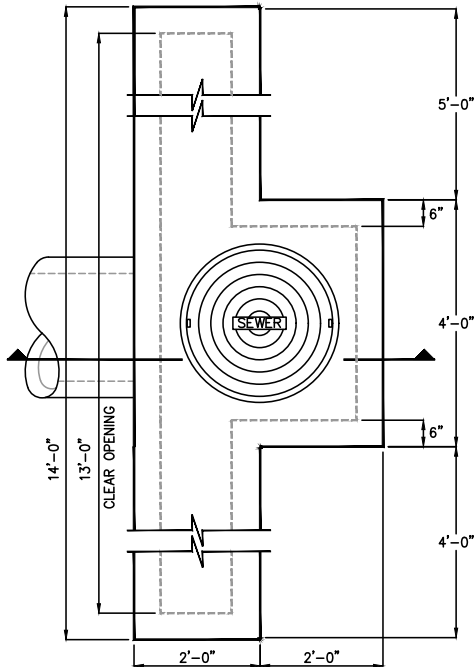
SPECIFICATIONS

- CONCRETE:** CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.
- REINFORCEMENT:** GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS:** CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

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PROJECT: .					
CUSTOMER: .					
ENGINEER: .					
ORDER #:	PROJ #:				
DATE:	LOCATION: .				
TYPE-C CURB INLET CITY OF HOUSTON					
PM	PC	DRN	ENG	DWG. NO.	REV.
DATE	07/2018	CI-C			A

Stormwater
Quality



NOTES:
1. SOME INLETS MAY USE COMBINATION OF TOP SECTION ONLY/TOP + CENTER SECTION/ OR TOP + CENTER + BOTTOM SECTION, DEPENDING ON INLET DEPTH.

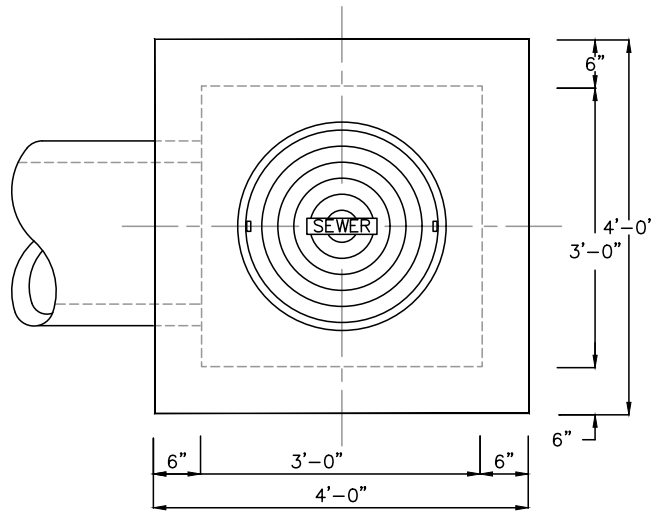
© ParkUSA. ALL RIGHTS RESERVED.



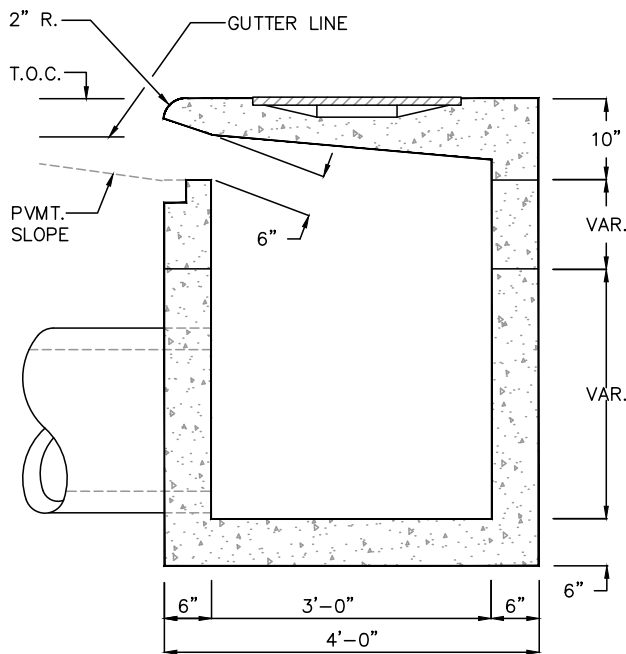
SPECIFICATIONS

- CONCRETE : CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.
- REINFORCEMENT: GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

PROJECT: .					
CUSTOMER: .					
ENGINEER: .					
ORDER #: .	PROJ #: .				
DATE: .	LOCATION: .				
TYPE-C2 CURB INLET CITY OF HOUSTON - MODEL COHTC2-2					
PM	PC	DRN	ENG	DWG. NO.	REV.
DATE	07/2018			CI-C2	A



PLAN

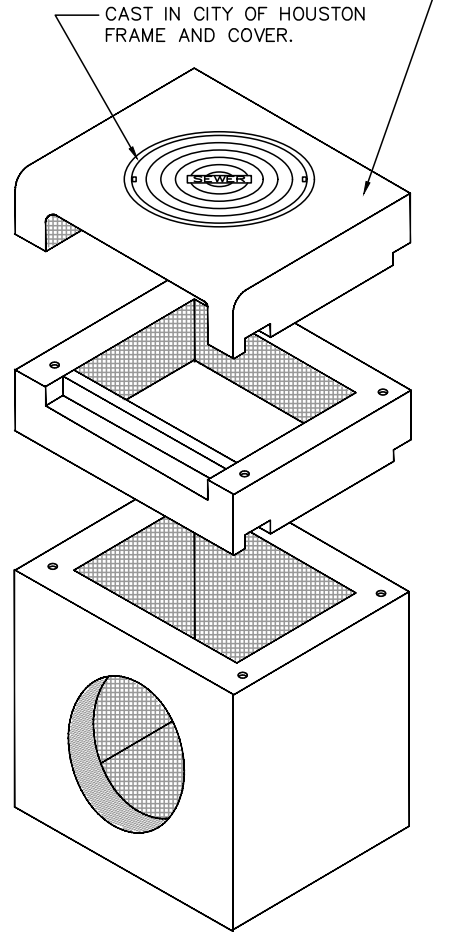


SECTION

SPECIFICATIONS

- CONCRETE : CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.
- REINFORCEMENT: GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

TYPE-C3 CURB INLET
PARK USA
888-611-PARK
WWW.PARKUSA.COM
MODEL CI-C3



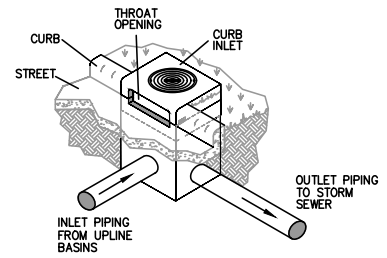
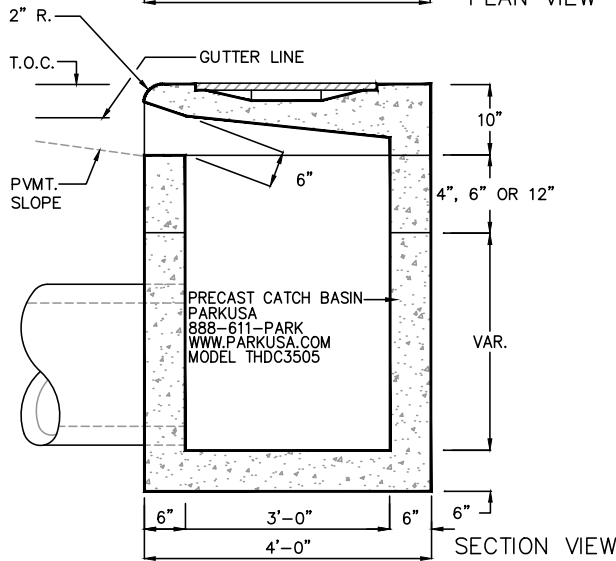
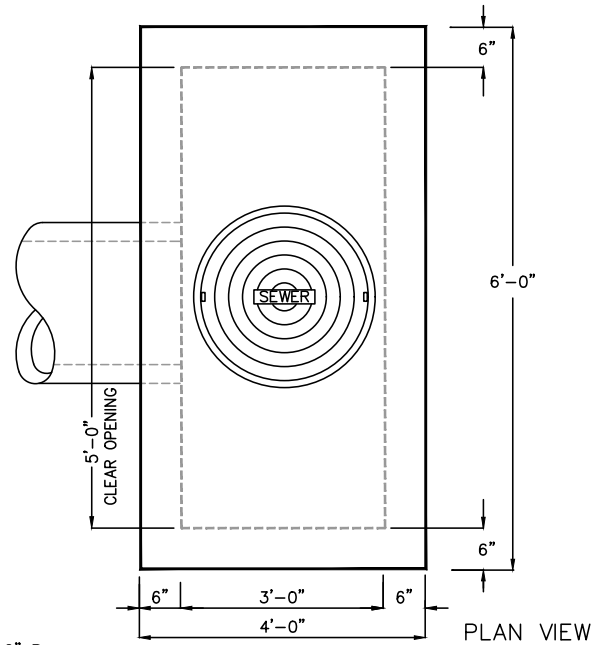
ISOMETRIC

NOTE:
COIL ADJUSTMENT BOLTS
ARE FURNISHED.

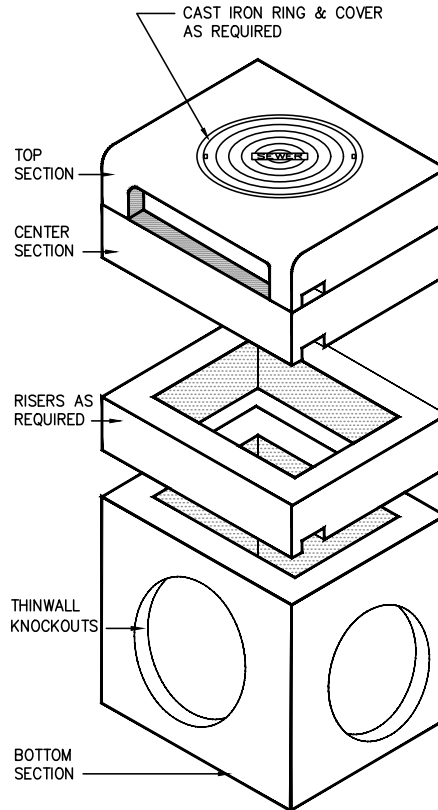
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PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: .	LOCATION: .
CITY OF HOUSTON TYPE-C3 CURB INLET	
PM	PC
DRN	ENG
DWG. NO.	
REV.	
DATE 07/2018	CI-C3
A	

Stormwater
Quality



APPLICATION



ISOMETRIC

NOTES:

- SOME INLETS MAY USE COMBINATION OF TOP SECTION ONLY/TOP + CENTER SECTION/ OR TOP + CENTER + BOTTOM SECTION, DEPENDING ON INLET DEPTH.

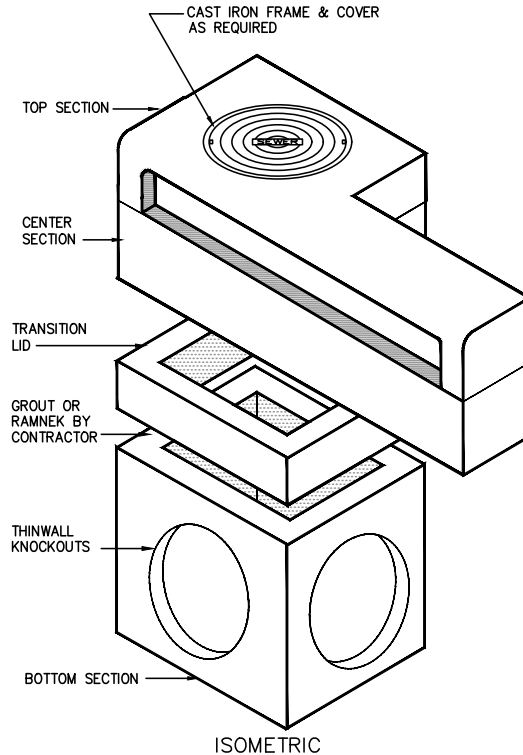
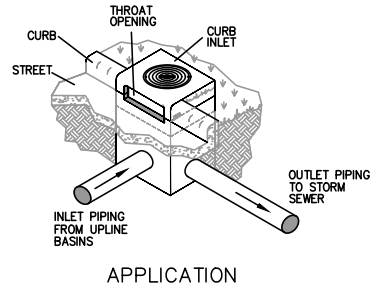
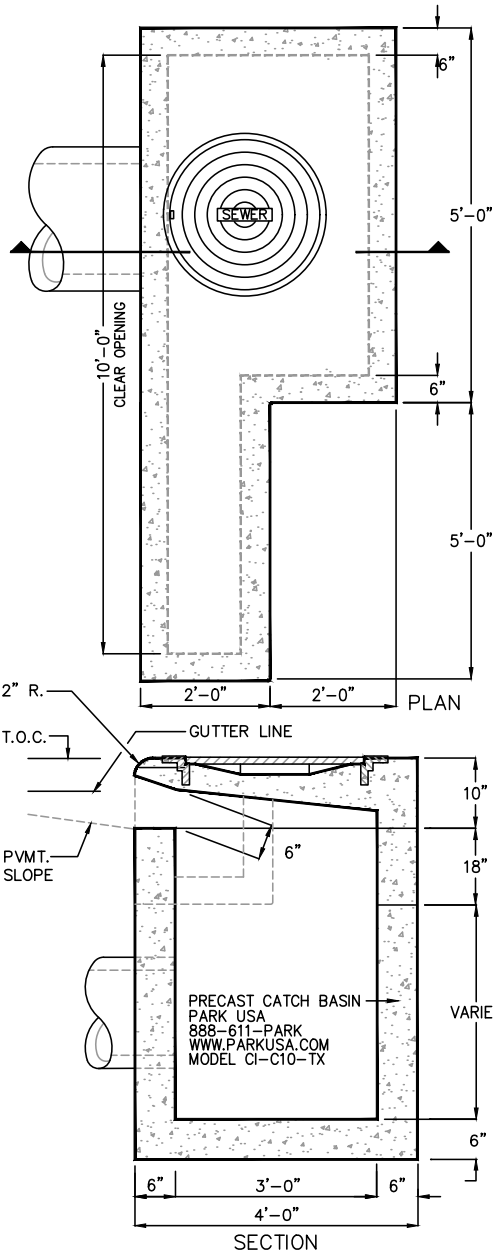
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SPECIFICATIONS

- CONCRETE :** CLASS 1/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.
- REINFORCEMENT:** GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS:** CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: .	LOCATION: .
TYPE-C 5'-0" CURB INLET TEXAS HIGHWAY DEPARTMENT - MODEL CI-CS-TX	
PM .	PC .
DRN .	ENG .
DATE 07/2018	DWG. NO. CI-C5-TX
REV. A	



NOTES:
1. SOME INLETS MAY USE COMBINATION OF TOP SECTION ONLY/TOP + CENTER SECTION/ OR TOP + CENTER + BOTTOM SECTION, DEPENDING ON INLET DEPTH.



SPECIFICATIONS

CONCRETE : CLASS 1/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.

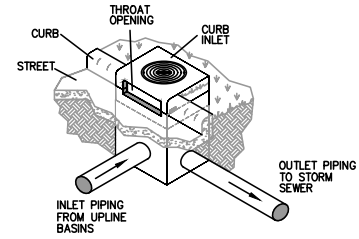
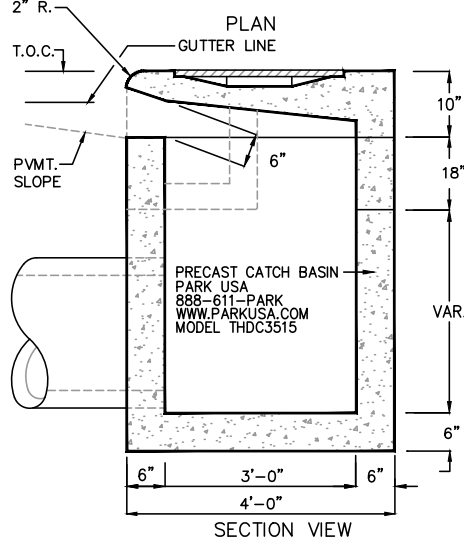
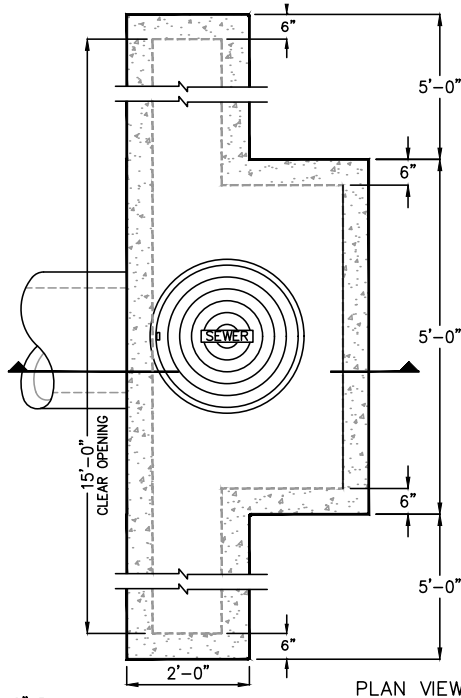
REINFORCEMENT: GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

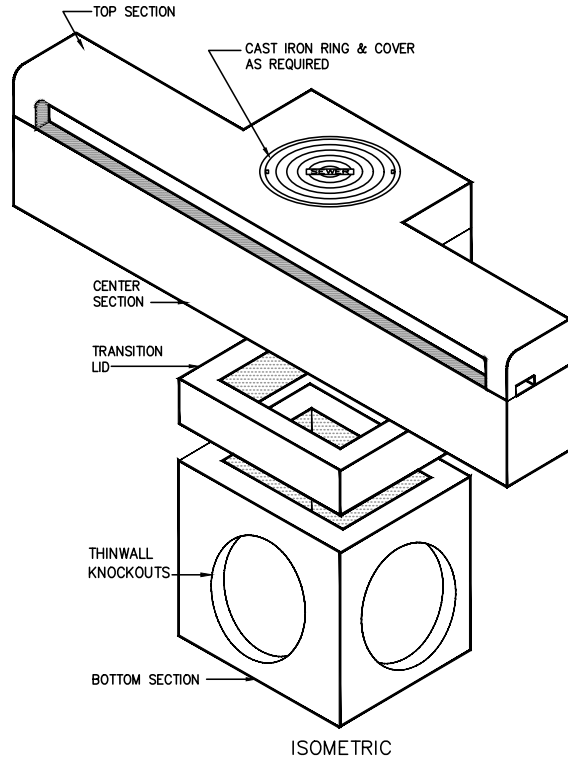
© ParkUSA. ALL RIGHTS RESERVED.

PROJECT: .					
CUSTOMER: .					
ENGINEER: .					
ORDER #: .	PROJ #: .				
DATE: .	LOCATION: .				
TYPE-C 10'-0" CURB INLET TEXAS HIGHWAY DEPARTMENT - MODEL CI-C10-TX					
PM	PC	DRN	ENG	DWG. NO.	REV.
DATE	07/2018			CI-C10-TX	A

Stormwater Quality



APPLICATION



ISOMETRIC

NOTES:

- SOME INLETS MAY USE COMBINATION OF TOP SECTION ONLY/TOP + CENTER SECTION/ OR TOP + CENTER + BOTTOM SECTION, DEPENDING ON INLET DEPTH.

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SPECIFICATIONS

- CONCRETE :** CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.
- REINFORCEMENT:** GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS:** CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

PROJECT: .					
CUSTOMER: .					
ENGINEER: .					
ORDER #:	PROJ #:				
DATE:	LOCATION: .				
TYPE-C 15'-0" CURB INLET TEXAS HIGHWAY DEPARTMENT - MODEL C1-C15-TX					
PM	PC	DRN	ENG	DWG. NO.	REV.
DATE	07/2018			CI-C15-TX	A

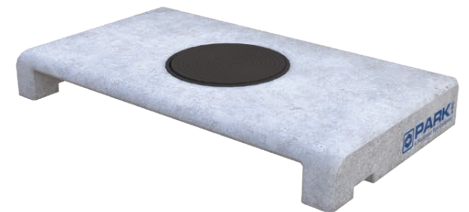
CURB INLETS

STORMWATER DRAINAGE



Features

- Strong and durable precast construction
- Consists of top, riser, and bottom stages
- Optional knock-outs, block-outs, frames, covers and grates
- In stock and easy to install
- City & state approved models

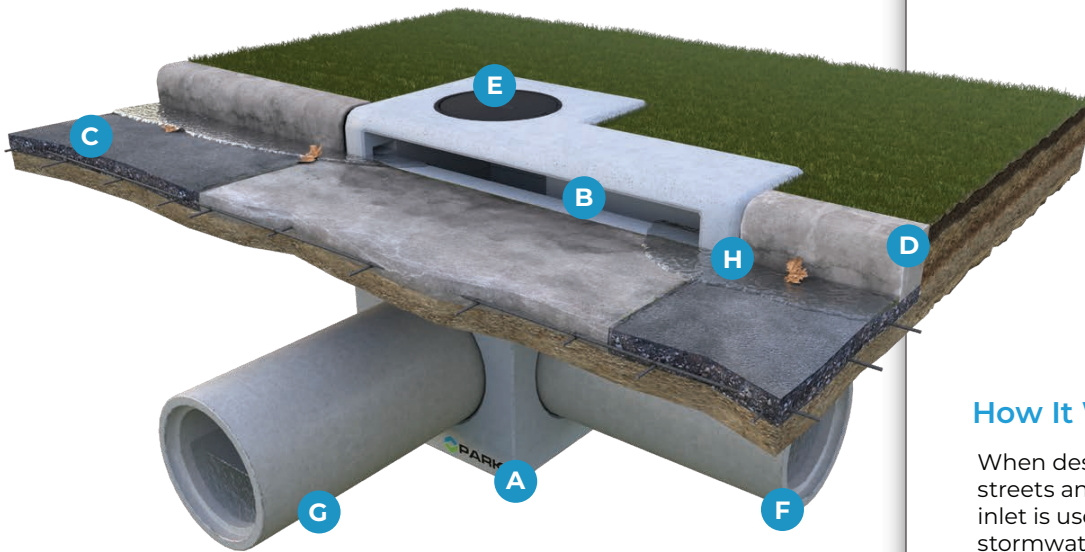


Curb Inlets

Stormwater infrastructure exists to manage excess water during rainfall events. Excessive stormwater can lead to flooding and potential public safety risk and property damage. Development and building projects require a properly designed drainage system to effectively move stormwater to a public stormwater sewer or body of water. A stormwater sewer is a complex system made up of many unique components for catchment, conveyance, detention, and quality treatment. Curb inlets are an important part of a properly designed stormwater management system — they allow water to flow directly from paved surfaces to a storm sewer.



SW | CURBINLET
Standard



How It Works

When designing or building new streets and parking areas, a curb inlet is used to assist in the stormwater drainage of the paved surface area. The curb inlet consists of a first-stage belowground box structure (A) with a second stage horizontal throat opening (B) that is flush with the paved surface (C). As the name implies, the throat opening is placed along the street curb perimeter (D). Internal access to the inlet structure is provided by an iron manhole cover (E). Storm sewer pipe (F) is connected to the inlet structure to provide for drainage out of the structure. Often, the curb inlet structure is used a junction point when an incoming drainage pipe (G) is connected. During a rain event, stormwater (H) drains from the street surface into the throat opening of the curb inlet. This water continues to drain into a sewer pipe that is connected to the curb inlet box structure. The stormwater sewer piping is placed at a downward-sloping gradient to encourage water to flow through the piping; this is also known as "gravity-flow." The stormwater eventually flows into a stream, river, ocean, or type of public estuary.

Visit curbinlets.parkusa.com for more information and design assistance.

To request a quote or catalog, visit request.parkusa.com.



Model CI



Model BBI



Model EI



Model BI

Options

Curb inlets can also be outfitted with optional devices to increase its pollution collection performance of debris, sediment, nutrients, and hydrocarbons.

APPLICATIONS



Good to use
in BMPs



Commercial



Residential



Municipal




Industrial



Low Impact
Development

INLET FILTERS



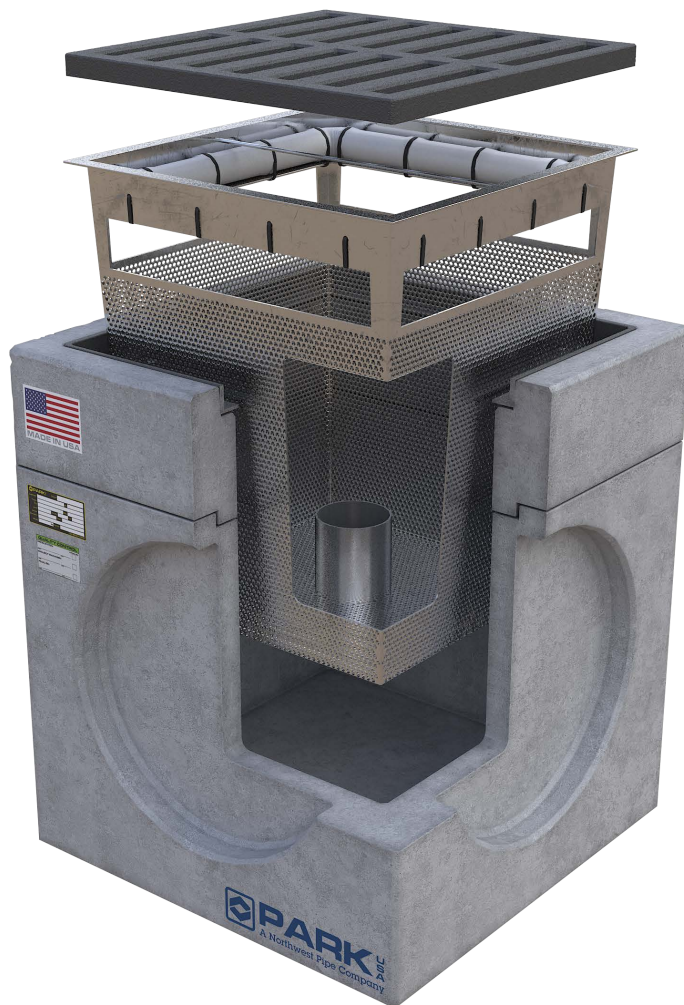

PARK
USA
A Northwest Pipe Company

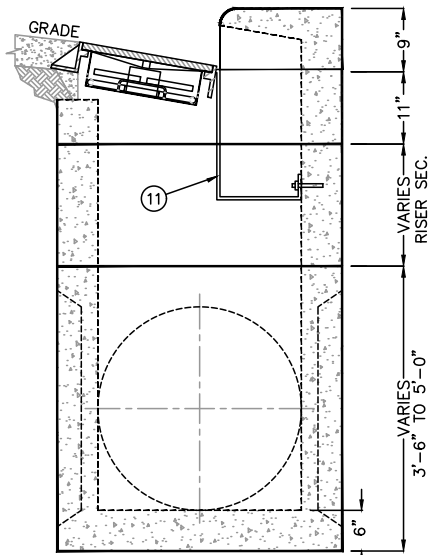
ENGINEERING FACTS

GENERAL INFORMATION

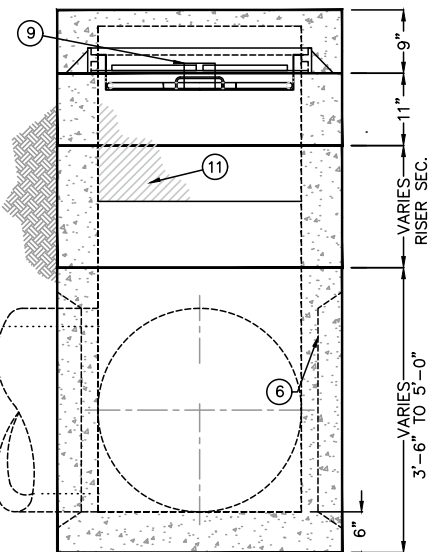
The ParkUSA FilterBasin™ is a family of stormwater best management practice (BMP) devices designed to fit within common basin structures to provide an economical best management practice solution. In this way, stormwater runoff treatment provides protection from pollutants entering rain gardens, public waterways, streams, rivers, lakes and aquifers. Vehicles traveling over streets, driveways, and parking lots leave hydrocarbons from vehicle lubricant leaks, metals produced by brake pad wear, and tire residue. These pollutants are picked up by stormwater runoff during the storm's "first flush" event when pollutant concentration is highest.

As rainwater accumulates on pavement, the stormwater will flow to the lowest point, where catchment structures like catch basins and curb inlets are typically installed. These basins present an opportunity to pre-filter the stormwater prior to discharging into rain gardens and storm sewers. The FilterBasin family of products provides the best solution to pre-filtration requirements on these types of events.



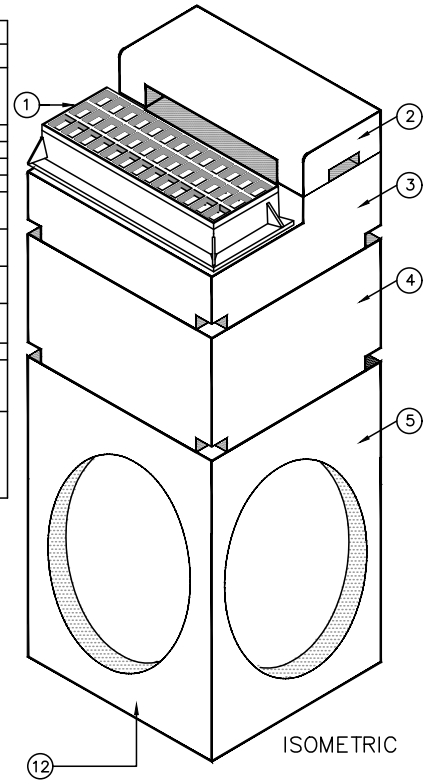


SIDE ELEVATION

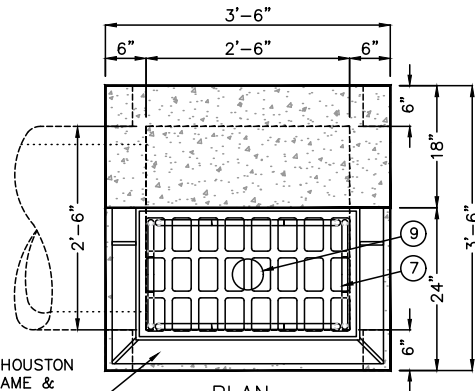


FRONT ELEVATION

KEYED NOTES		
MARK	QTY	DESCRIPTION
1	1	STD. CITY OF HOUSTON C.I. FRAME & GRATE (PLATE AVAILABLE)
2	1	TOP
3	1	MID-SECTION
4	1	RISER SECTION
5	1	BOTTOM SECTION
6	1	TYPICAL THIN WALL KNOCK-OUT AS REQ'D
7	4	HYDROPHOBIC MEDIA FILTER
8	1	PERFORATED SS304 DEBRIS BASKET
9	1	PERFORATED OVERFLOW W/ OPEN TOP
10	2	LIFT HANDLE
11	1	LARGE DEBRIS SCREEN BASKET, PERFORATED SS304
12	1	NAMEPLATE PARKUSA 888-611-PARK WWW.PARKUSA.COM MODEL CIF-1



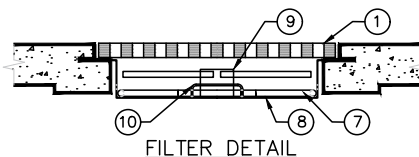
ISOMETRIC



STD. CITY OF HOUSTON CAST IRON FRAME & GRATE (PLATE AVAILABLE).

PLAN

APPROVED FOR CITY OF HOUSTON



FILTER DETAIL

SPECIFICATIONS

CONCRETE : CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.

REINFORCEMENT: GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

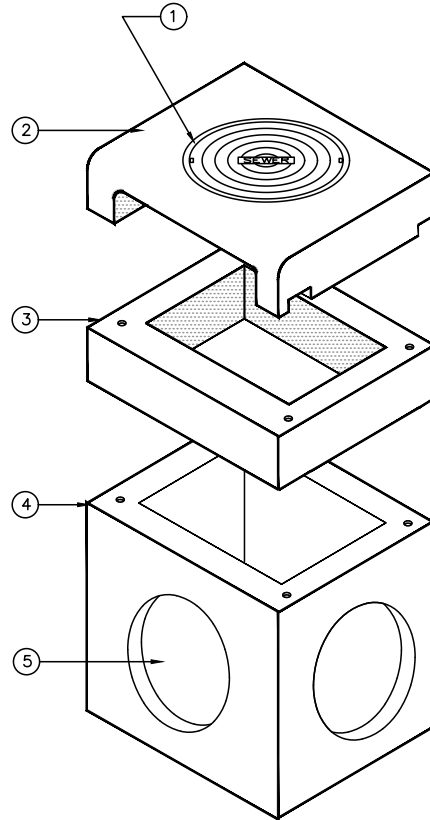
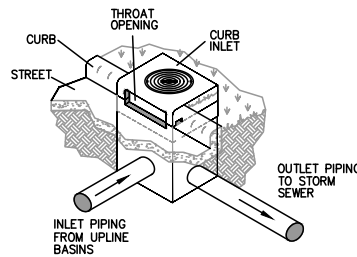
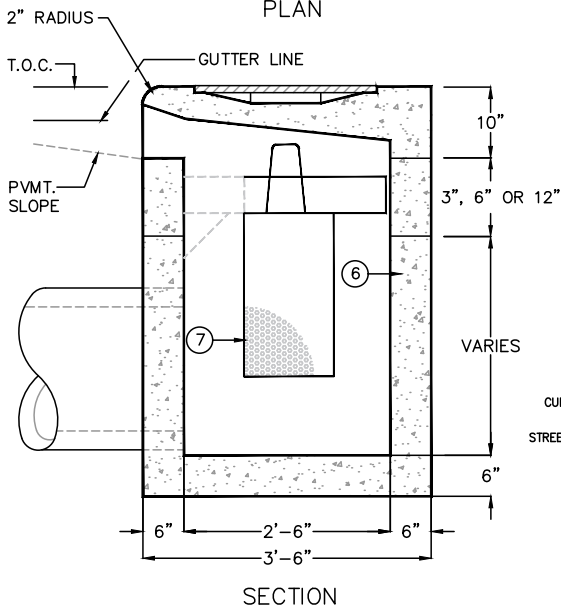
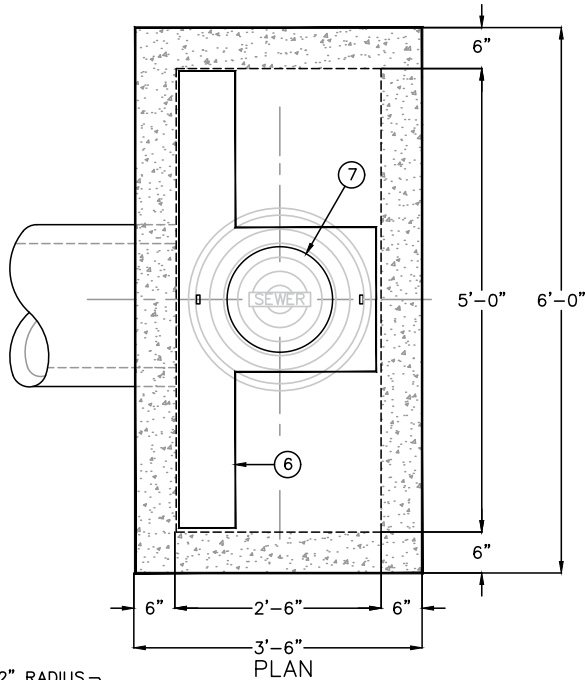
C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.



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PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: .	LOCATION: .
PARK USA	
www.parkusa.com 888-611-PARK	
CURB INLET FILTER MODEL CIF-1	
PM	PC
DRN	ENG
DWG. NO.	
DATE	REV.
05/2019	CIF-1

Stormwater
Quality



ISOMETRIC

KEYED NOTES		
MARK	QTY	DESCRIPTION
1	1	CAST IN CITY OF HOUSTON RING AND COVER
2	1	TOP SECTION
3	1	RISER AS REQ'D
4	1	BASIN SECTION
5	1	THINWALL KNOCKOUTS
6	1	FLOW DIVERSION TRAY, SS304
7	1	REMOVEABLE DEBRIS BASKET W/ HANDLE, SS304
6	1	NAMEPLATE MFG: ParkUSA 888-611-PARK WWW.PARKUSA.COM MODEL: C1FC-1


NOTE: BASE SIZE ADJUSTABLE FROM 30"X60" TO 60"X60".

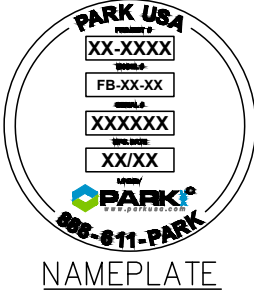
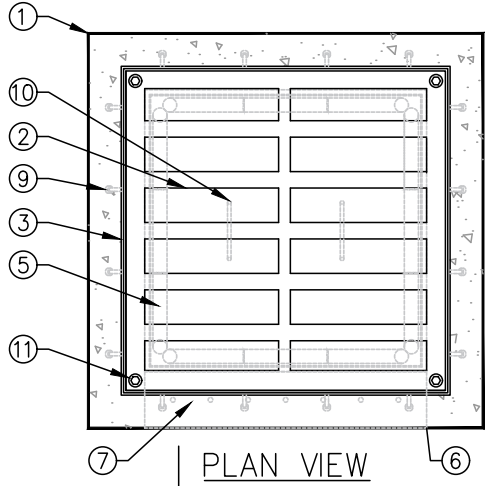
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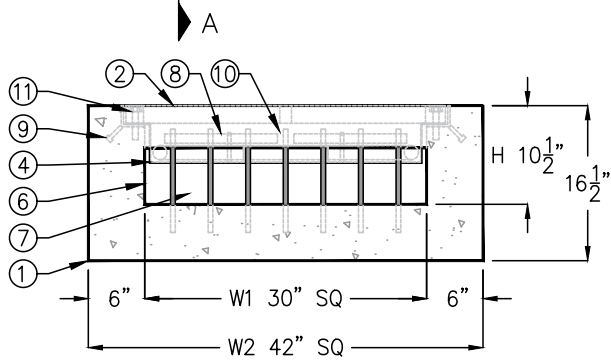
SPECIFICATIONS

- CONCRETE :** CLASS II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.
- REINFORCEMENT:** GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS:** CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

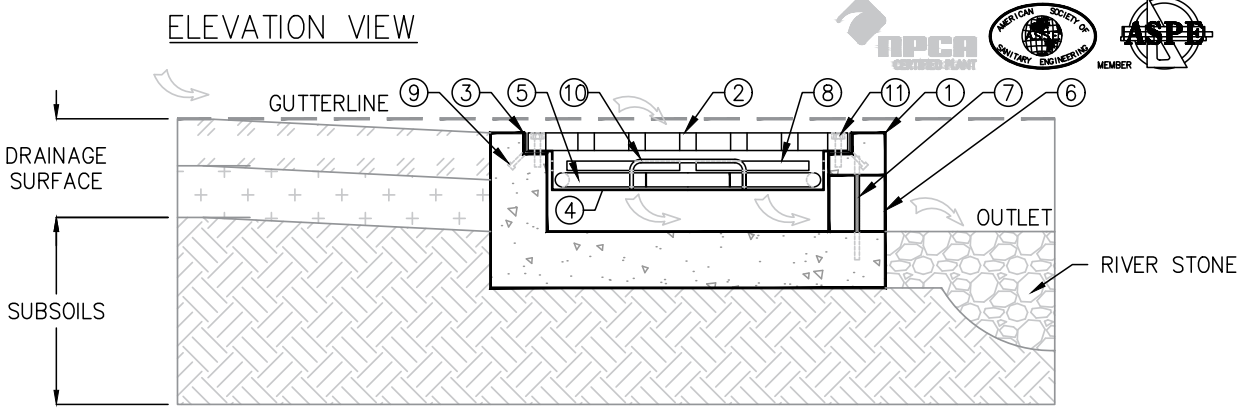
PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: .	LOCATION: .
	
www.parkusa.com 888-611-PARK	
TYPE-H2 CURB INLET FILTER MODEL C1FC-1	
PM .	REV. .
PC .	
DRN .	
ENG .	
DWG. NO. C1FC-1	
DATE 05/2019	



KEYED NOTES		
MRK	QTY	DESCRIPTION
1	1	TYPE-A 30"x30" INLET BASIN
2	1	30"x30" BOLT DOWN CAST IRON GRATE FOR LARGE DEBRIS
3	1	30"x30" CAST IRON FRAME W/ FPT BOLT THREADS
4	1	REMOVEABLE PERFORATED SOLIDS SCREENING BASKET FOR SMALL DEBRIS
5	-	OIL ABSORBANT MEDIA (AS REQ'D)
6	1	SLOTTED OPENING FOR STORMWATER OUTLET
7	5	OUTLET SECURITY BARS
8	8	STORMWATER OVERFLOW ORIFICE
9	-	CONCRETE ANCHORS (AS REQ'D)
10	2	SCREENING BASKET HANDLES
11	-	GRATE BOLTS (AS REQ'D)
12	1	NAMEPLATE INDICATING: MFG: PARKUSA 888-611-PARK WWW.PARKUSA.COM MODEL: FB-1 MFG DATE



MODEL	W1	W2	H	T	WEIGHT
FBRG-30	30"	42"	10 1/2"	6"	1613 LB
FBRG-36	36"	48"	10 1/2"	6"	2006 LB



APPLICATION, SECTION A-A

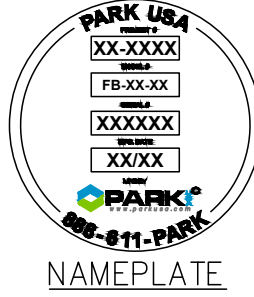
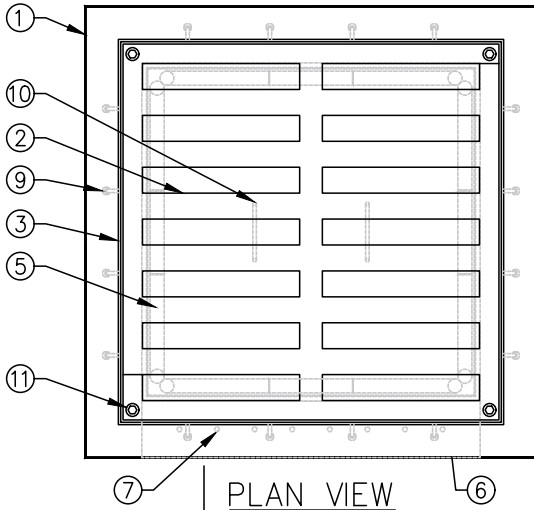
SPECIFICATIONS

- CONCRETE :** CLASS 1 CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.
- REINFORCEMENT:** GRADE 60 REINFORCED. STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS:** CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

PROJECT: .
 CUSTOMER: .
 ENGINEER: .
 ORDER #: . PROJ #: .
 DATE: . LOCATION: .

PARK USA
 www.parkusa.com 888-611-PARK
 FILTER BASIN - RAIN GARDEN
 MODEL FB-30

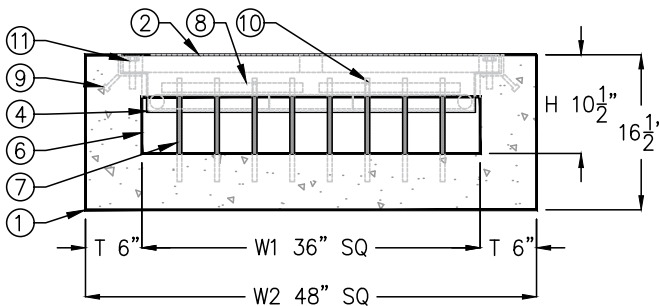
PM	PC	DRN	ENG	DWG. NO.	REV.
				FBRG-30	
DATE				05/2019	



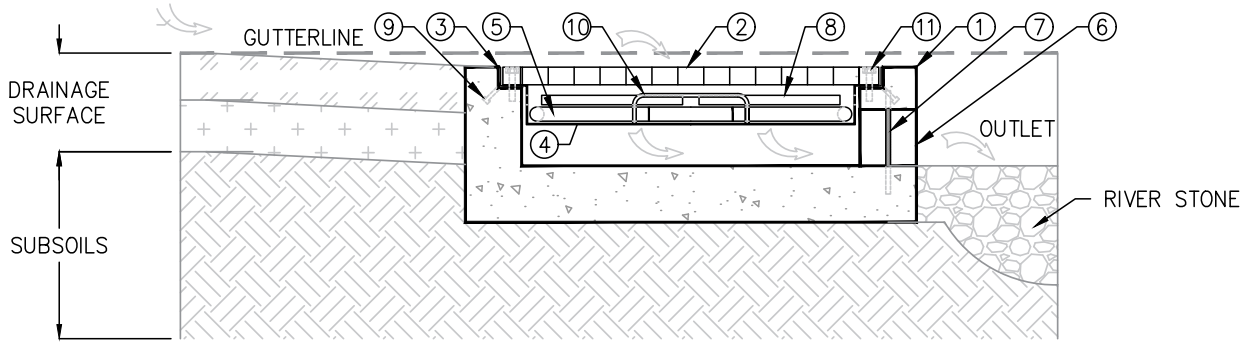
NAMEPLATE

KEYED NOTES		
MRK	QTY	DESCRIPTION
1	1	TYPE-A 36"x36" INLET BASIN
2	1	36"x36" BOLT DOWN CAST IRON GRATE FOR LARGE DEBRIS
3	1	36"x36" CAST IRON FRAME W/ FPT BOLT THREADS
4	1	REMOVEABLE PERFORATED SOLIDS SCREENING BASKET FOR SMALL DEBRIS
5	-	OIL ABSORBANT MEDIA
6	1	SLOTTED OPENING FOR STORMWATER OUTLET
7	8	OUTLET SECURITY BARS
8	8	STORMWATER OVERFLOW ORIFICE
9	-	CONCRETE ANCHORS (AS REQ'D)
10	2	SCREENING BASKET HANDLES
11	-	GRATE BOLTS (AS REQ'D)
12	1	NAMEPLATE INDICATING: MFG: PARKUSA 888-611-PARK WWW.PARKUSA.COM MODEL: FBRG-36 MFG DATE

MODEL	W1	W2	H	T	WEIGHT
FBRG-30	30"	42"	10 $\frac{1}{2}$ "	6"	1613 LB
FBRG-36	36"	48"	10 $\frac{1}{2}$ "	6"	2006 LB



ELEVATION VIEW




APPLICATION, SECTION A-A

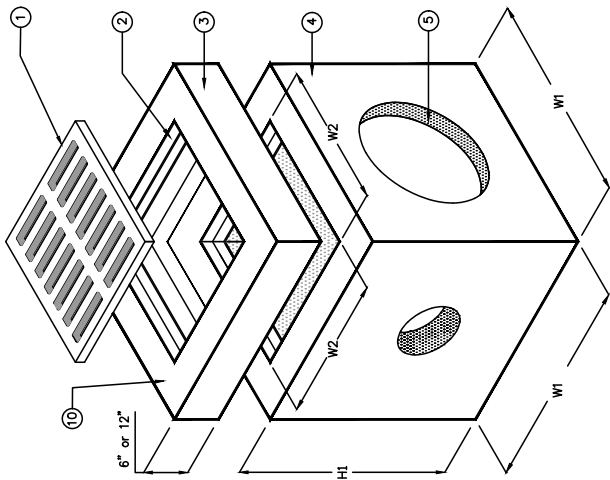
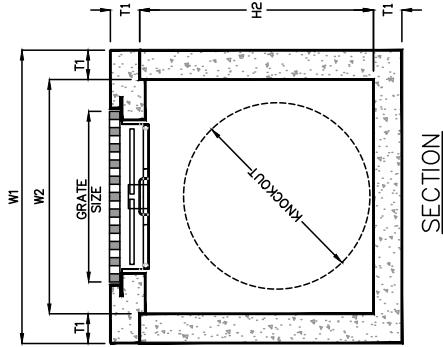
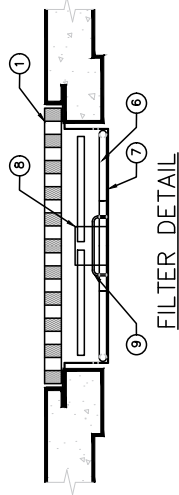
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SPECIFICATIONS

- CONCRETE :** CLASS 1 CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.
- REINFORCEMENT:** GRADE 60 REINFORCED. STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS:** CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: .	LOCATION: .
	
www.parkusa.com 888-611-PARK	
FILTER BASIN – RAIN GARDEN MODEL FBRG-36	
PM	PC
DRN	ENG
DATE	DWG. NO.
05/2019	FBRG-36
REV.	

KEYED NOTES	
MARK QTY	DESCRIPTION
1	GRATE OR COVER AS REQUESTED, SEE OPTIONS
2	1 CAST-IN STEEL FRAME
3	1 OPTIONAL TOP/EXTENSION 6" TO 18"
4	1 PRECAST CONCRETE BASIN SECTION
5	4 KNOCKOUTS (STD) AND PENETRATIONS (OPT) AS REQUIRED, SEE KO DIMENSION FOR MAXIMUM PIPE O.D.*
6	4 HYDROPHOBIC MEDIA FILTER
7	1 PERFORATED SS304 DEBRIS BASKET
8	1 PERFORATED OVERFLOW W/ OPEN TOP
9	1 LIFTING HANDLES
NAMEPLATE INDICATING: MFG: PARKUSA 888-611-PARK WWW.PARKUSA.COM MODEL: GIF-01 DATE MANUFACTURED	



MODEL	W1	W2	H1	H2	T1	T2	KO	GRATE SIZE	OPEN AREA SQ IN	WEIGHT LBS
GIF-12	15"	10"	21"	18"	3"	2.5"	10"	12" x 12" x 1"	90	180
GIF-14	20"	12"	28"	24"	4"	4"	12"	14" x 14" x 1 1/2"	120	600
GIF-18	24"	16"	34"	30"	4"	4"	15"	18" x 18" x 1 1/2"	168	1,000
GIF-20	26"	18"	34"	30"	4"	4"	17"	20" x 20" x 1 1/2"	170	1,335
GIF-24	32"	22"	41"	36"	5"	5"	22"	24" x 24" x 2"	268	2,245
GIF-27	37"	25"	42"	36"	6"	6"	24"	27" x 27" x 2"	350	2,875
GIF-30	42"	30"	42"	36"	6"	6"	30"	32" x 32" x 2"	490	3,675
GIF-36	48"	36"	42"	36"	6"	6"	32"	38" x 38" x 2"	693	4,585
GIF-48	60"	48"	54"	48"	6"	6"	48"	38" x 38" x 2"	693	7,250
*GIF-60	72"	60"	66"	60"	6"	6"	60"	38" x 38" x 2"	693	10,500
*GIF-72	84"	72"	78"	72"	6"	6"	72"	38" x 38" x 2"	693	15,350
*GIF-84	96"	84"	78"	72"	6"	6"	72"	38" x 38" x 2"	693	19,500

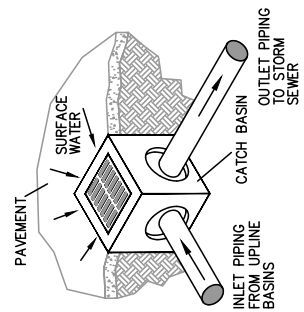
*KNOCKOUTS NOT AVAILABLE

SPECIFICATIONS

CONCRETE : CLASS 1/1 CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT: GRADE 60 REINFORCED STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.



NOTE: KNOCKOUTS-STD, PENETRATIONS-OPTIONAL

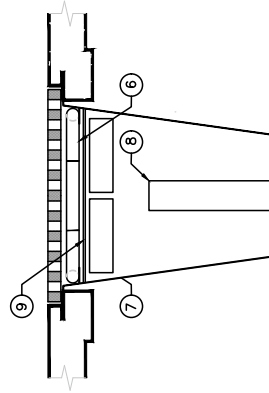
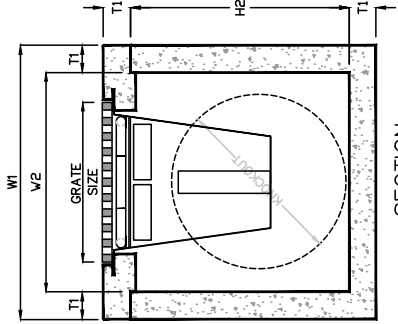


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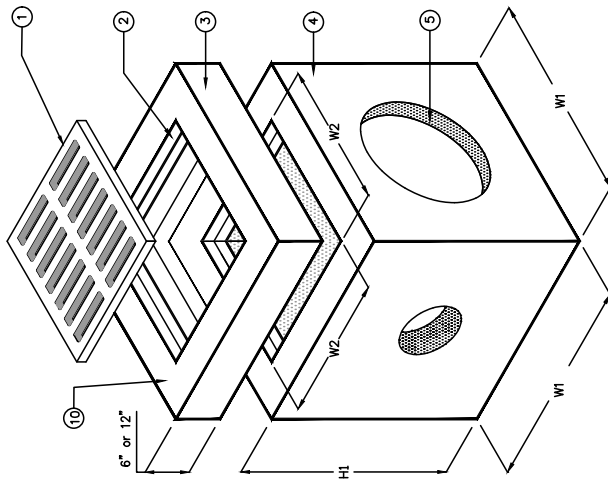
PROJECT:	PROJ #:
CUSTOMER:	LOCATION:
ENGINEER:	
ORDER #:	
DATE:	
PARK	
www.parkusa.com 888-611-PARK	
GRATE INLET FILTER	
MODEL GIF - 12" THRU 84"	
PM	PC
DRN	ENG
DWG. NO.	REV.
DATE 05/2019	GIF-1

Stormwater Quality

KEYED NOTES	
MARK QTY	DESCRIPTION
1	GRATE OR COVER AS REQUESTED, SEE OPTIONS
2	CAST-IN STEEL FRAME
3	OPTIONAL TOP/EXTENSION 6" TO 18"
4	PRECAST CONCRETE BASIN SECTION KNOCKOUTS (STD) AND PENETRATIONS (OPT) AS REQUIRED, SEE KO DIMENSION FOR MAXIMUM PIPE O.D.*
5	4
6	HYDROPHOBIC MEDIA FILTER
7	PERFORATED OVERFLOW W/ OPEN TOP
8	LIFTING HANDLES
9	NAMEPLATE INDICATING: MFG: PARKUSA 888-611-PARK WWW.PARKUSA.COM MODEL: GFB-01 DATE MANUFACTURED
10	1



BASKET DETAIL



ISOMETRIC

NOTE: KNOCKOUTS-STD, PENETRATIONS-OPTIONAL

MODEL	W1	W2	H1	H2	T1	T2	KO	GRATE SIZE	OPEN AREA SQ IN	WEIGHT LBS
GFB-12	15"	10"	21"	18"	3"	2.5"	10"	12" x 12" x 1"	90	180
GFB-14	20"	12"	28"	24"	4"	4"	12"	14" x 14" x 1 1/2"	120	600
GFB-18	24"	16"	34"	30"	4"	4"	15"	18" x 18" x 1 1/2"	168	1,000
GFB-20	26"	18"	34"	30"	4"	4"	17"	20" x 20" x 1 1/2"	170	1,335
GFB-24	32"	22"	41"	36"	5"	5"	22"	24" x 24" x 2"	268	2,245
GFB-27	37"	25"	42"	36"	6"	6"	24"	27" x 27" x 2"	350	2,875
GFB-30	42"	30"	42"	36"	6"	6"	30"	32" x 32" x 2"	490	3,675
GFB-36	48"	36"	42"	36"	6"	6"	32"	38" x 38" x 2"	693	4,585
GFB-48	60"	48"	54"	48"	6"	6"	48"	38" x 38" x 2"	693	7,250
*GFB-60	72"	60"	66"	60"	6"	6"	60"	38" x 38" x 2"	693	10,500
*GFB-72	84"	72"	78"	72"	6"	6"	72"	38" x 38" x 2"	693	15,350
*GFB-84	96"	84"	78"	72"	6"	6"	72"	38" x 38" x 2"	693	19,500

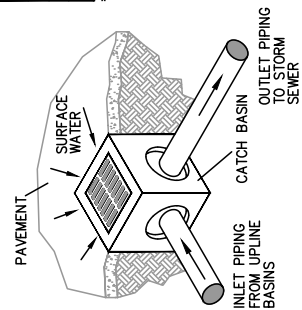
*KNOCKOUTS NOT AVAILABLE

SPECIFICATIONS

CONCRETE : CLASS 1/11 CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT: GRADE 60 REINFORCED. STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.



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PROJECT:

CUSTOMER:

ENGINEER:

ORDER # : PROJ # :

DATE: LOCATION:

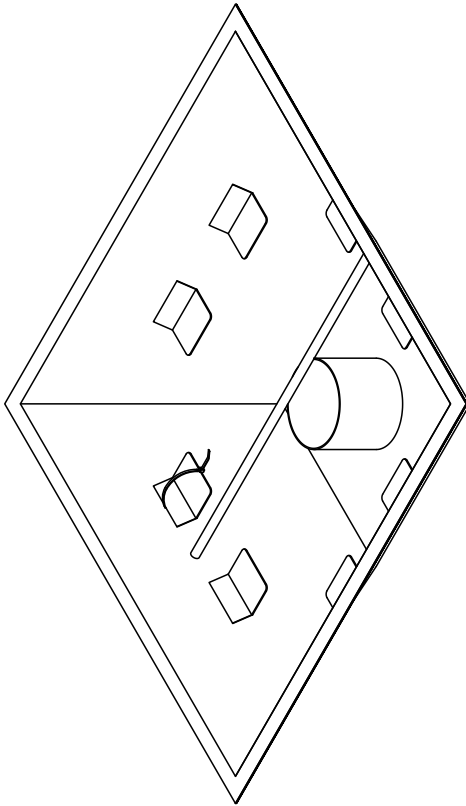
PARKUSA
www.parkusa.com 888-611-PARK

GRATE INLET FILTER
MODEL GIF - 12" THRU 84"

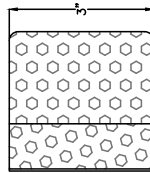
DATE 05/2019

REV.

GIFB-1



SW ISOMETRIC VIEW

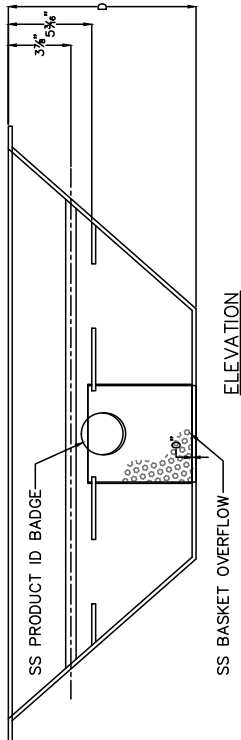


PLAN VIEW



ELEVATION

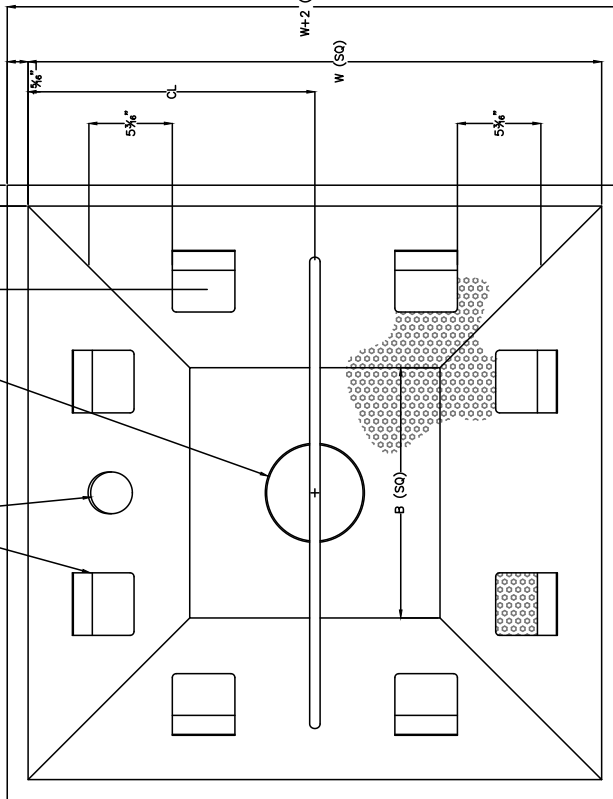
**A) OIL PILLOW TAB
DETAIL**



ELEVATION

SS PRODUCT ID BADGE

SS BASKET OVERFLOW



PLAN VIEW

MODEL #	FITS BASIN MODEL	W	B	D	W+2	CL
GIF-18	CB-18	15 1/2"	12"	9"	17 1/2"	7 3/4"
GIF-20	CB-20	17 1/2"	12"	9"	19 1/2"	8 3/4"
GIF-24	CB-24	21 1/2"	12"	9"	23 1/2"	10 3/4"
GIF-27	CB-27	24 1/2"	12"	9"	26 1/2"	12 1/4"
GIF-30g	CB-30g	27 1/2"	12"	9"	29 1/2"	13 3/4"
GIF-30	CB-30	29 1/2"	12"	9"	31 1/2"	14 3/4"
GIF-36	CB-36	35 1/2"	12"	9"	37 1/2"	16 3/4"

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PROJECT: ..
 CUSTOMER: ..
 ENGINEER: ..
 ORDER #: .. PROJ #: ..
 DATE: .. LOCATION: ..



www.parkusa.com 888-611-PARK

CATCHBASIN DEBRIS BASKET
 MODEL - GIF-BASKET

PM	PC	DRN	ENG	DWG. NO.	GIF-BASKET	REV.
..
DATE 05/2019						

- SPECIFICATIONS**
- BASKET AND TABS TO BE CONSTRUCTED OF 16GA SS 304 PERFORATED PLATE (1/4" HOLES ON 1/2" STAGGER)
 - BASKET LIP TO BE CONSTRUCTED OF 14GA SS 304 PLATE
 - HANDLE TO BE CONSTRUCTED OF 1/2" SS 304 ROUND BAR
 - OVERFLOW ORIFICE TO BE CONSTRUCTED OF SS PERFORATED CYLINDER.



Filterbasin

The ParkUSA® FilterBasin™ is a family of stormwater best management practice (BMP) devices designed to fit within common basin structures to provide an economical best management practice solution. In this way, stormwater runoff treatment provides protection from pollutants entering rain gardens, public waterways, streams, rivers, lakes and aquifers. Vehicles traveling over streets, driveways, and parking lots leave hydrocarbons from vehicle lubricant leaks, metals produced by brake pad wear, and tire residue. These pollutants are picked up by stormwater runoff during the storm's "first flush" event when pollutant concentration is highest. As rainwater accumulates on pavement, the stormwater will flow to the lowest point, where catchment structures like catch basins and curb inlets are typically installed. These basins present an opportunity to pre-filter the stormwater prior to discharging into rain gardens and storm sewers. The FilterBasin family of products provides the best solution to pre-filtration requirements on these types of events.

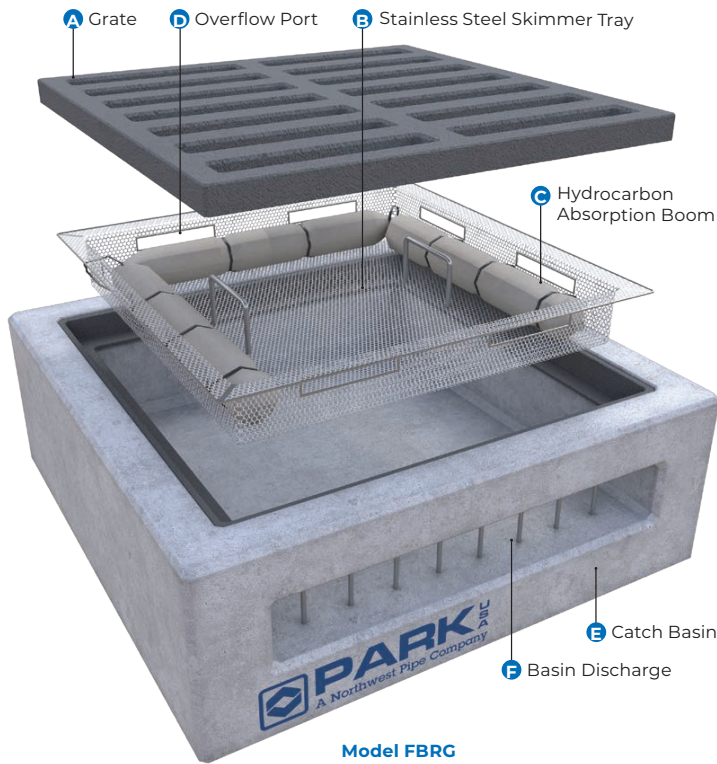


Features

- Pre-engineered to fit any inlet basin or curb cut
- Stainless steel construction
- Overflow protection
- Low cost
- Easy installation and maintenance
- Made in the USA - Filterbasins are made in America and meet the requirements of the Buy America Act



SW FILTERBASIN
Standard



Model FBRG

How it Works

As stormwater passes through the surface grating (A), debris larger than the grate openings are prevented from entering rain gardens or the storm sewer.

Flow goes through a skimmer tray (b) and encounters the hydrocarbon absorption boom (c).

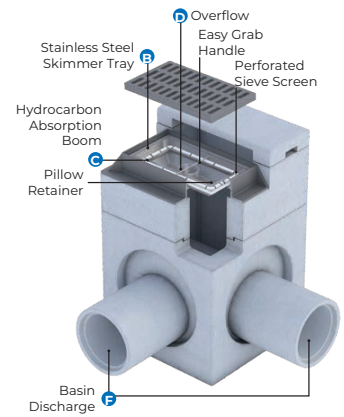
The skimmer tray includes overflow ports (d) and easy grab handles.

The treated water goes into the catch basin (e) and flows out through the basin's discharge piping or opening of the basin (F).

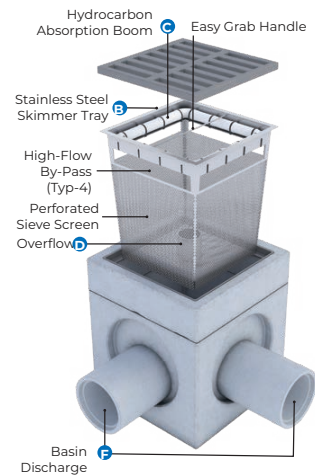
Finally, the collected debris dries after each storm event and can be removed for proper disposal.

Visit filterbasin.parkusa.com for more information and design assistance.

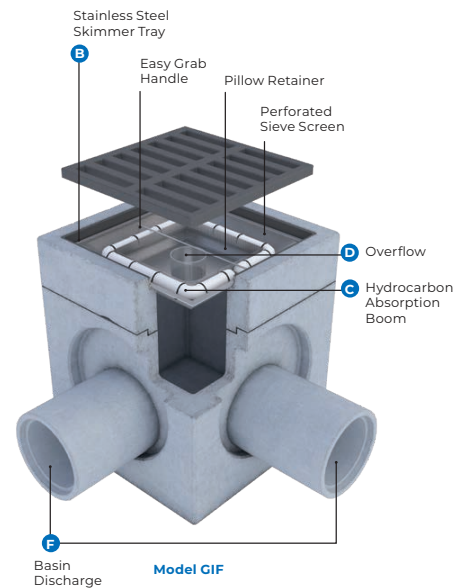
To request a quote or catalog, visit request.parkusa.com.



Model CIF



Model GIFB

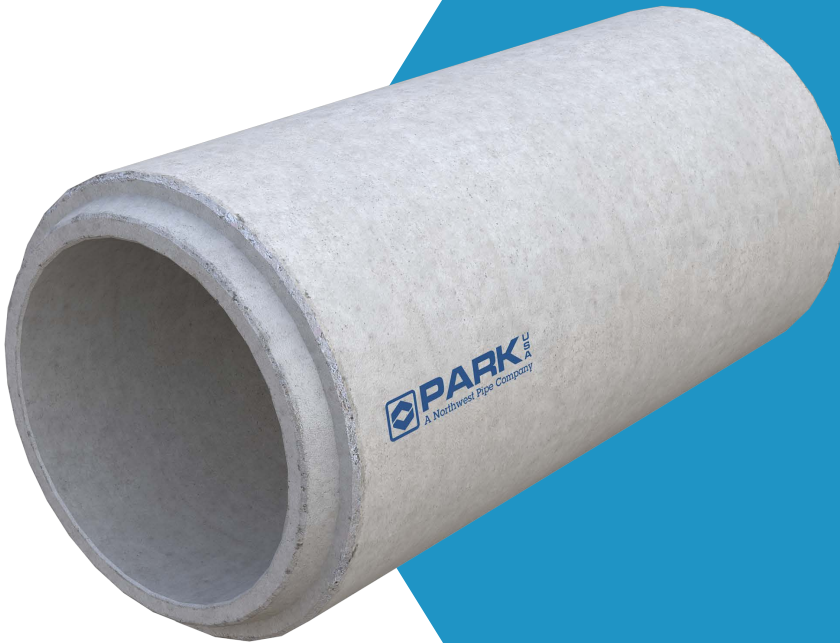


Model GIF

APPLICATIONS



DRAINAGE PIPES



ENGINEERING FACTS

GENERAL INFORMATION

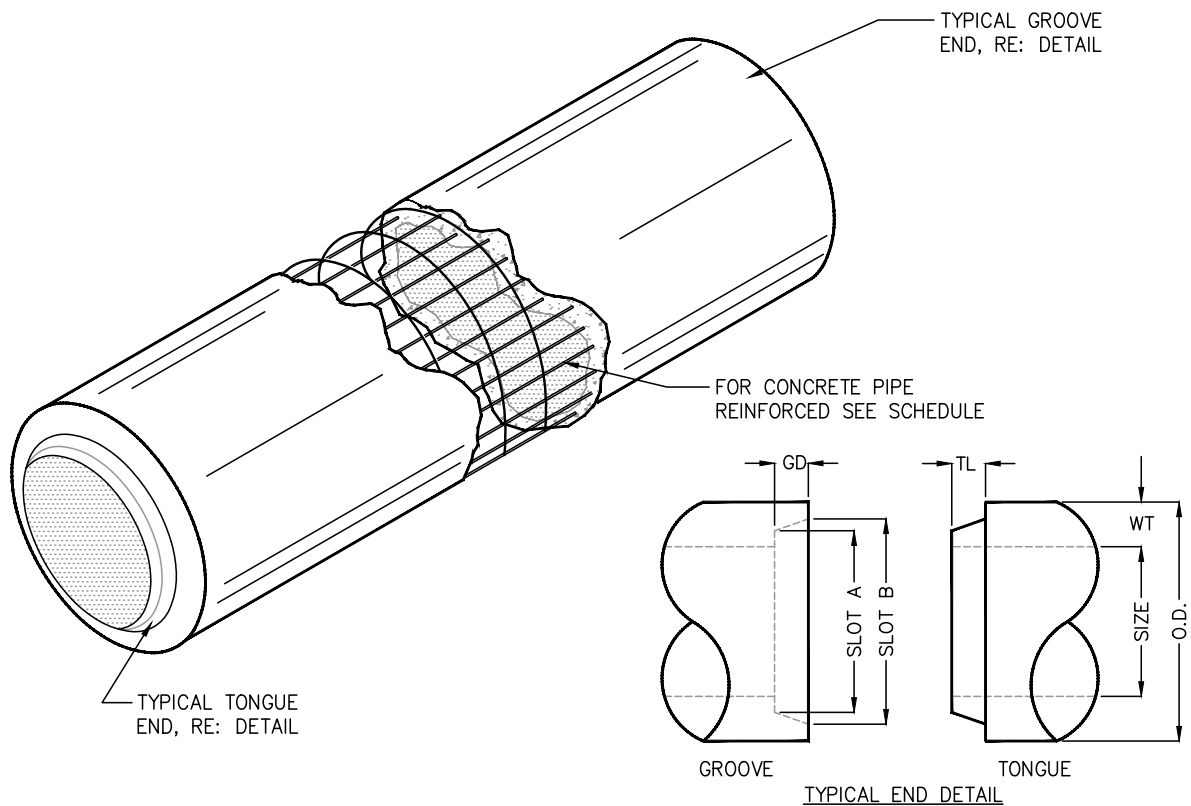
Drainage Pipe, or Reinforced Concrete Pipe (known as “RCP”) is the strongest and the most reliable pipe used for underground stormwater sewers. Sizes range from 12 inches to 96 inches in diameter, and lengths up to eight feet. The RCP pipe sections contain a male and female ends for interconnecting the pipe segments. These connections are sealed watertight with a butyl gasket material or rubber o-ring.



Drainages Pipe, or Reinforced Concrete Pipe (known as “RCP”) is the strongest and the most reliable pipe used for underground stormwater sewers.

DIMENSION SCHEDULE OF C-76 TONGUE & GROOVE PIPE

PIPE SIZE I.D.	O.D.	WT. / FT.	AVAILABLE LENGTHS	REINFORCEMENT	WALL THICKNESS WT	TONGUE LENGTH TL	GROOVE DEPTH GD	SLOT DIM		QUANTITY L.F.
								A	B	
12"	16"	100 LBS	4' OR 6'	W 2.0x2.5 3"x8"	2"	2"	2"	13½"	14½"	
15"	19½"	125 LBS	4' OR 6'	W 2.0x2.5 3"x8"	2¼"	2½"	2½"	16½"	17¾"	
18"	23"	160 LBS	4' OR 6'	W 2.0x2.5 3"x8"	2½"	2"	2¼"	19⅝"	20½"	
24"	30"	260 LBS	4' OR 6'	W 2.0x2.5 3"x8"	3"	2¾"	2¾"	26¾"	27¾"	
30"	37¼"	395 LBS	6'	W 3.0x2.0 2"x8"	3⅝"	3¾"	3½"	31¾"	33¾"	
36"	44"	520 LBS	6'	W 3.5x2.0 2"x8"	4"	2"	2¼"	32¾"	34¾"	
42"	52"	743 LBS	8'	W 3.5x2.0 2"x8"	5"	4"	2¼"	52"	52¼"	
48"	58"	838 LBS	8'	W 3.5x2.0 2"x8"	5"	4½"	4¾"	52"	52¼"	



SPECIFICATIONS

- CONCRETE:** CLASS 1 CONCRETE WITH DESIGN STRENGTH OF 4000 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AND IS DESIGNED CONFORMING TO ASTM C-76 CLASS III, WALL B.
- REINFORCEMENT:** GRADE 60 REINFORCED. STEEL REBAR CONFORMING TO ASTM A185 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS:** CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

© ParkUSA. ALL RIGHTS RESERVED. RCP-1

PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: .	LOCATION: .
www.parkusa.com 888-611-PARK	
REINFORCED CONCRETE PIPE	
MODEL RCP - 12" THRU 48"	
PM .	PC .
DRN .	ENG .
DATE 05/2019	DWG. NO. RCP-1
REV.	

MANHOLES



ENGINEERING FACTS

GENERAL INFORMATION

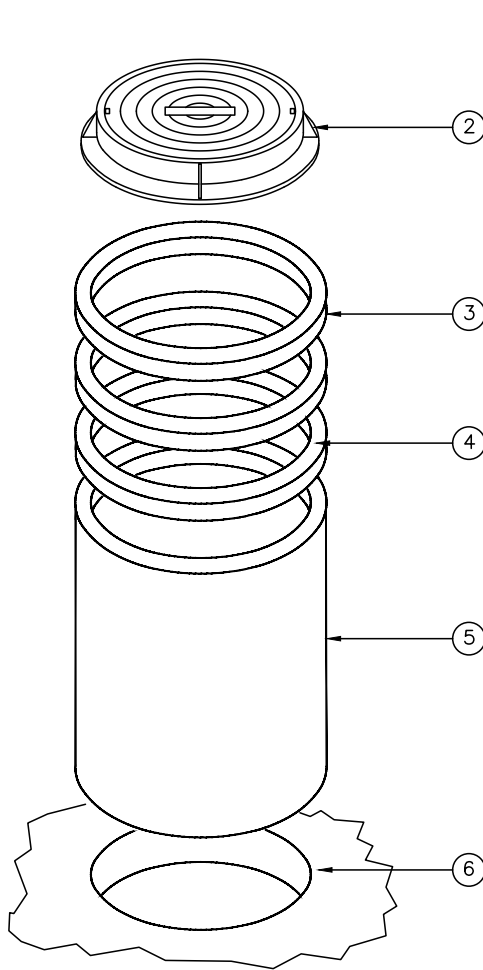
Below ground wastewater and stormwater sewer piping require access openings at certain intervals to allow for access, connection points, and change-in-direction points. A “Manhole” is used for these activities. The Manhole is a belowground round or square structure made of precast concrete. Sewer piping connects near the bottom of the manhole structure. At the street level, an iron access cover (often referred to as a “manhole cover”) is placed to permit access.

Sanitary Sewer Manholes: This manhole is used on sanitary sewer lines for the conveyance of sanitary sewer. The Sanitary Sewer Manhole is typically 48-inch diameter and varies in depth according to the depth of the sanitary sewer. At the bottom of the manhole and at the pipe connections of the sewer, a channel (also called an “invert”) is formed so that the sewer flow is smooth and unimpeded. Since sanitary sewer can be corrosive, interior liners can be specified to the manhole interior.

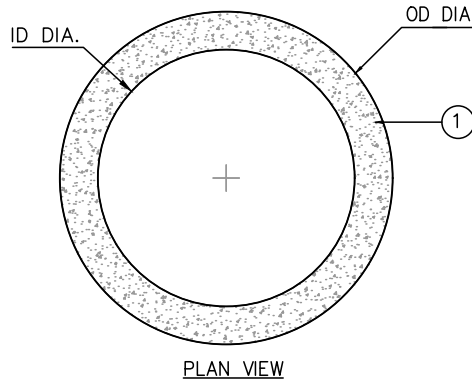
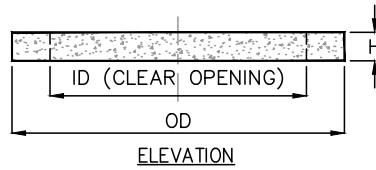
Stormwater Manholes: This manhole is used on stormwater sewer lines for the conveyance of rainwater. The Storm Sewer Manhole is generally characterized by a larger size, which is dictated by the sewer pipe connection sizes and orientation. Sizes of Storm Sewer Manholes can range from 48 inches to 120 inches in diameter and will vary in depth according to the depth of the storm sewer.



Below ground wastewater and stormwater sewer piping require access openings at certain intervals to allow for access, connection points, and change-in-direction points. A “Manhole” is used for these activities.



TYPICAL INSTALLATION



GRADE RING DIMENSIONS				
MODEL	ID	OD	H	WEIGHT LBS
GR-2403	24"	30"	3"	66
GR-3003	30"	36"	3"	81

NOTES:

1. NET WEIGHT AS INDICATED
2. RINGS ARE AVAILABLE PALLETIZED

SPECIFICATIONS

- CONCRETE: CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS.
- REINFORCEMENT: STRUCTURAL REINFORCEMENT CONFORMING TO ASTM-C-478.
- C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

KEYED NOTES		
MARK	QTY	DESCRIPTION
1	1	PRECAST CONCRETE EXTENSION RING
2	1	TYPICAL CAST IRON MANHOLE RING & COVER
3	1	ADJUSTMENT RINGS STACKED UNTIL DESIRED GRADE ELEVATION IS REACHED
4	1	CONCRETE MORTAR OR RAM-NEK SEALANT PLACED BETWEEN EXTENSION RINGS
5	1	REINFORCED CONCRETE PIPE EXTENSION FOR DISTANCES GREATER THAN 12" (AS REQ'D)
6	1	TOP OF MANHOLE OR VAULT



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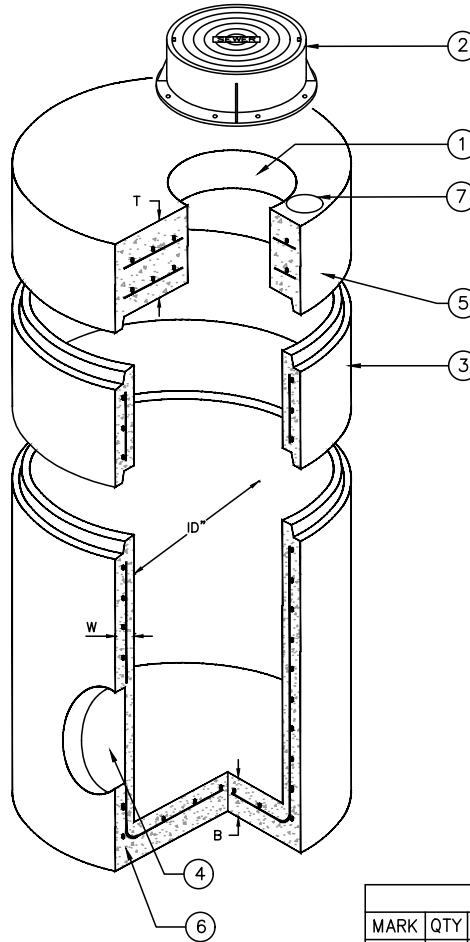
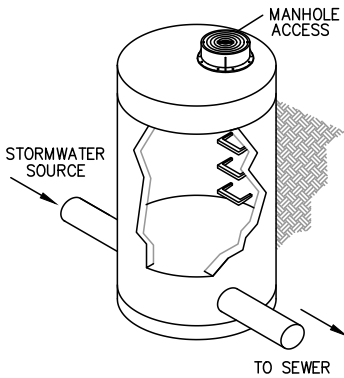
PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: .	LOCATION: .
www.parkusa.com 888-611-PARK	
PRECAST CONCRETE EXTENSION RING MODEL GR - 27" THRU 34 1/2"	
PM .	PC .
DRN .	ENG .
DATE 05/2019	DWG. NO. GR-1
REV. .	

Stormwater Quality

DIMENSIONS AND WEIGHTS					
MODEL NO	I.D. SIZE (in)	W (in)	B (in)	T (in)	RISER WT/LF (lb)
MHHD-48	48	5	8	10	868
MHHD-60	60	6	8	10	1300
MHHD-72	72	6	10	10	1811
MHHD-84	84	6	12	12	2350
MHHD-96	96	6	12	12	3090
MHHD-120	120	8	12	14	3500
MHHD-144	144	8	12	14	4000

APPLICATIONS

- AIRPORTS
- CARGO LOADING AREAS
- HEAVY INDUSTRIAL PLANTS



NOTES:

1. JOINTS TO BE SEALED W/ PLASTIC RAM-NEK GASKET.
2. ALL DIMENSIONS ARE TO CENTER OF BLOCK-OUTS.
3. ALL PIPING BY OTHERS
4. LIFTING INSERTS AS REQUIRED.
5. STRUCTURE TO BE PLACED ON MIN. 6" STABILIZED BASE.
6. RISER SECTIONS FURNISHED AS REQUIRED

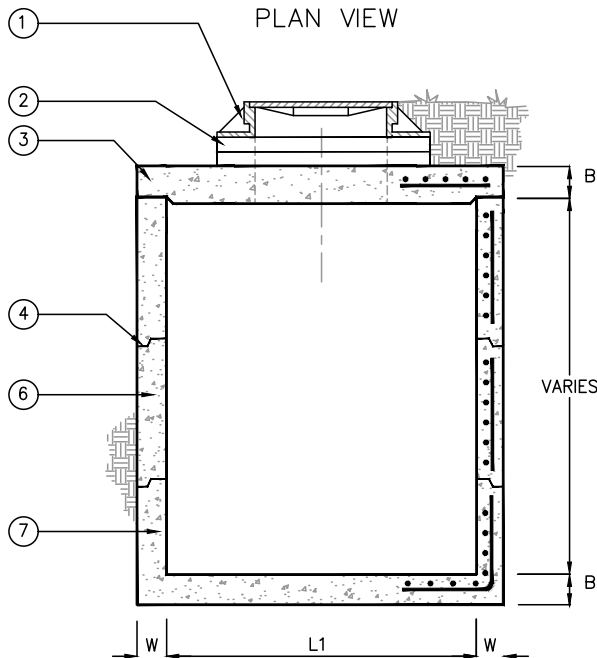
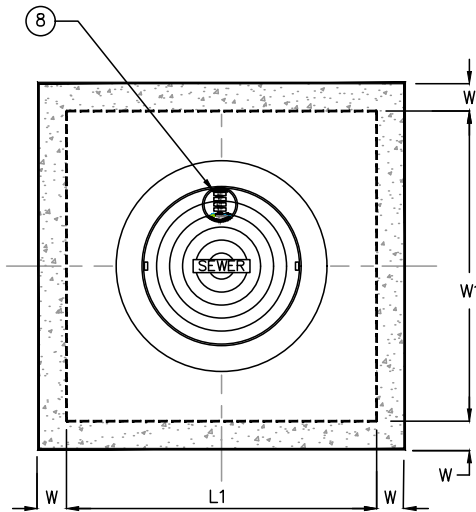
KEYED NOTES		
MARK	QTY	DESCRIPTION
1	1	TRANSITION LID OPENING AS REQUIRED
2	1	24" OR 30" DIA CAST IRON MANHOLE COVER, FURNISHED LOOSE OR CAST-IN, COVER SHALL BE RATED FOR 200,000 LBS
3	1	RISERS AS REQUIRED 12"/24"/36"/48" HEIGHTS
4	1	BLOCKOUTS AS REQUIRED
5	1	TOP-SECTION
6	1	BOTTOM (OPTIONAL)
7	1	NAMEPLATE INDICATING: MFG: ParkUSA 888-611-PARK WWW.PARKUSA.COM MODEL MHHD

SPECIFICATIONS

- CONCRETE :** CLASS 1 CONCRETE WITH DESIGN STRENGTH OF 5000 PSI OR RECOMMENDED AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.
- REINFORCEMENT:** GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL. MANHOLE TO CONFORM TO ASTM-C478 SPECIFICATIONS.
- C.I. CASTINGS:** CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

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PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: .	LOCATION: .
www.parkusa.com 888-611-PARK	
MANHOLE -EXTRA HEAVY-DUTY MODEL MHHD - 48" THRU 144"	
PM .	PC .
DRN .	ENG .
DATE 05/2019	DWG. NO. MHHD-1
REV. .	



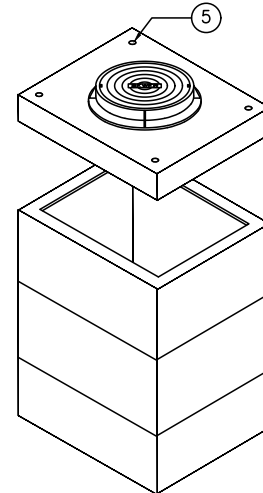
SECTION VIEW

SPECIFICATIONS

CONCRETE : CLASS I/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR, FIRST STAGE OF WALL AND BAFFLE WITH SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.



ISOMETRIC VIEW

DIMENSIONS			
MODEL	L1xW1 ID (in)	W (in)	B (in)
MHSQ-36	36	6	6
MHSQ-48	48	6	6
MHSQ-60	60	6	6
MHSQ-72	72	6	6
MHSQ-84	84	6	6
MHSQ-96	96	8	8

KEYED NOTES		
MARK	QTY	DESCRIPTION
1	1	24" OR 30" CAST IRON RING & COVER
2	1	GRADE RINGS AS REQUIRED
3	1	FLAT TOP
4	1	ALL JOINTS SEALED WATER TIGHT WITH RAM-NEKVVV
5	1	LIFTING LUGS AS REQUIRED (TYP 4)
6	1	RISER SECTION
7	1	BOTTOM SECTION
8	1	NAMEPLATE INDICATING: MFG: ParkUSA 888-611-PARK WWW.PARKUSA.COM MODEL MHSQ DATE MANUFACTURED

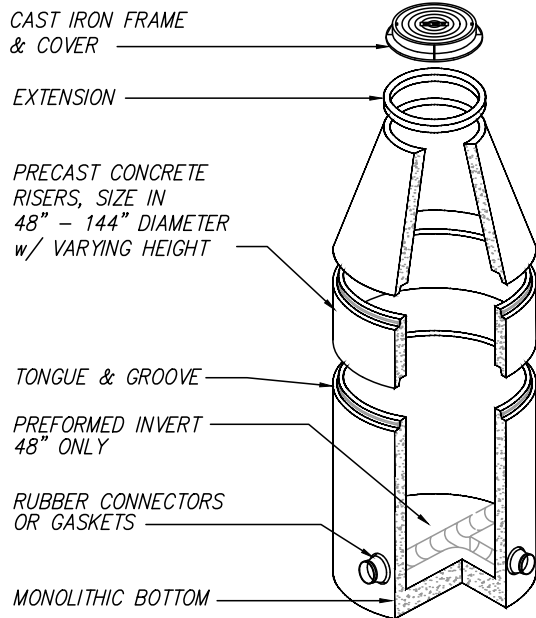


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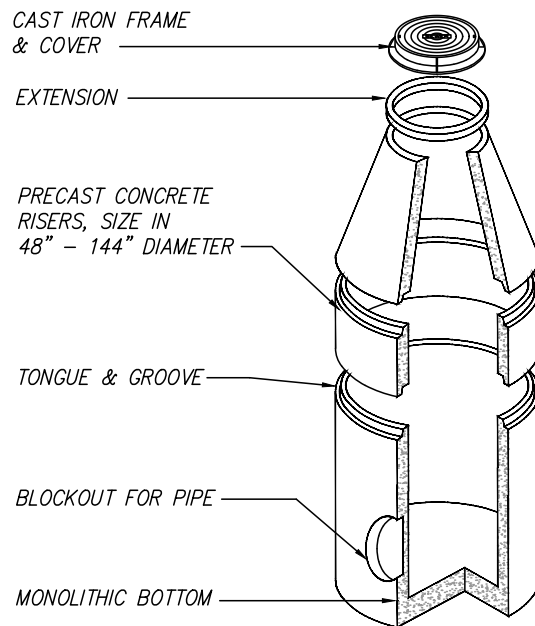
PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: .	LOCATION: .
www.parkusa.com 888-611-PARK	
PRECAST CONCRETE SQUARE MANHOLE	
MODEL MHSQ - SIZES 36" THRU 96"	
PM .	PC .
DRN .	ENG .
DATE 05/2019	DWG. NO. MHSQ-1
REV. .	

Stormwater Quality

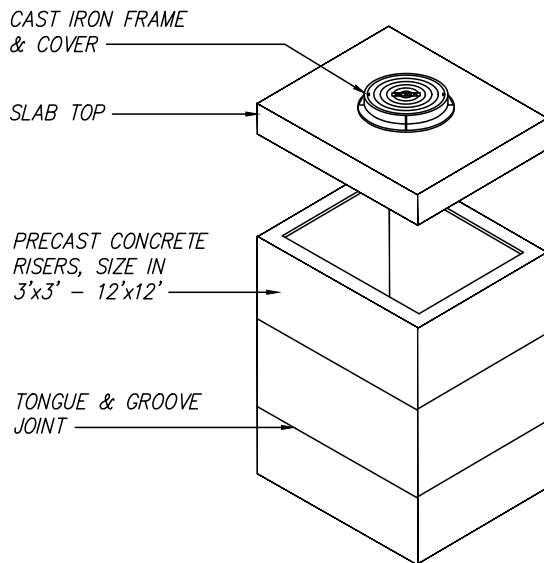
MHSQ-1



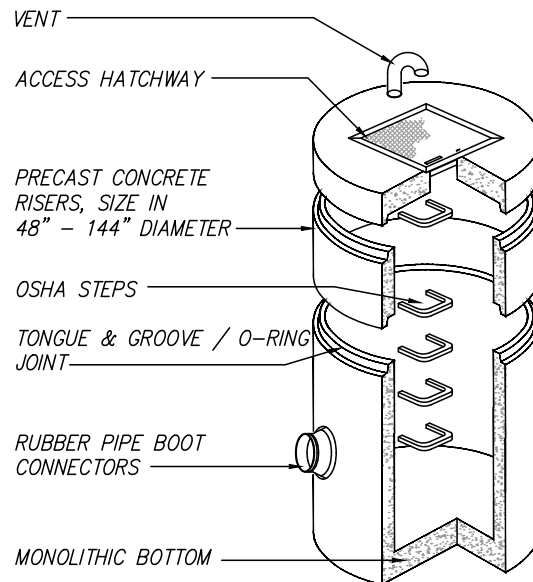
MANHOLE - SANITARY SEWER



MANHOLE - STORM SEWER



WET WELL - MULTI-PURPOSE



WET WELL - FOR PUMP STATION

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CLASS II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. RATED FOR H-20 LOADING.

STRUCTURAL REINFORCEMENT CONFORMING TO ASTM-C-478.

CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.

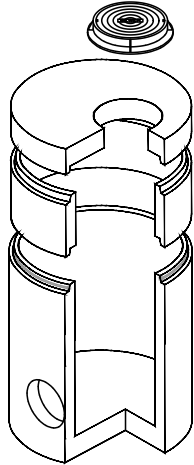


www.parkusa.com

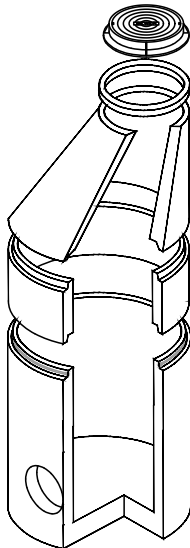
888-611-PARK

PRECAST CONCRETE MANHOLES
AND WET WELLS

PM	PC	DRN	ENG	DWG. NO.	REV.
.	.	.	.	MHWW-1	
DATE				05/2019	



SHOWN w/ FLAT TOP



SHOWN w/ ECCENTRIC CONE

OPTIONS

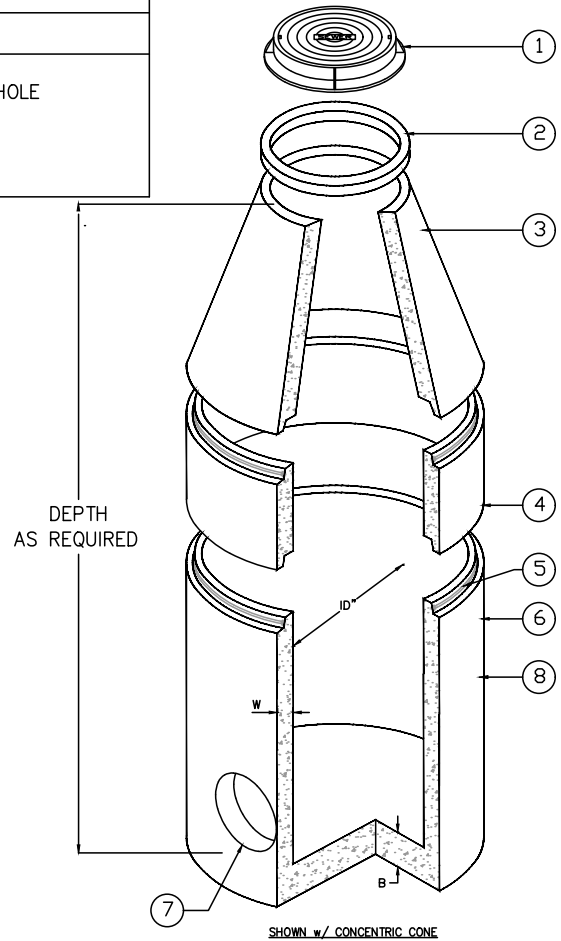
- * STEPS
- * EXTENDED LIP BASE
- * COATINGS
- * BOTTOM

KEYED NOTES		
MARK	QTY	DESCRIPTION
1	1	CAST IRON MANHOLE FRAME & COVER
2	1	3" THICK ADJUSTMENT RINGS AS REQUIRED. FLAT TOPS ARE AVAILABLE.
3	1	CONCENTRIC CONE
4	1	RISER SECTIONS AVAILABLE IN VARYING HEIGHTS.
5	1	48" USES O'RING, OTHER SIZES USE RAMNEK JOINT SEALANT
6	1	BASE SECTION, KNOCKOUTS AS REQUIRED.
7	1	HOLES AS REQUIRED
8	1	NAMEPLATE INDICATING: PRECAST CONCRETE MANHOLE MFG: ParkUSA 888-611-PARK WWW.PARKUSA.COM MODEL PCMHST

DIMENSIONS AND WEIGHTS			
I.D. SIZE (in)	W (in)	B* (in)	RISER WT/LF (lb)
48"	5"	6"	868
60"	6"	6"	1300
72"	6"	6"	1811
84"	6"	6"	2350
96"	6"	6"	3090
120"	8"	6"	3500
120"	8"	6"	3500

* MIN. THICKNESS BELOW INVERT

1. LIFTING INSERTS AS REQUIRED.
2. ALL JOINTS SHALL BE SEALED w/ RAM-NEK JOINT SEALANT
3. STRUCTURE TO BE PLACED ON MIN. 6" STABILIZED BASE.



SHOWN w/ CONCENTRIC CONE

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PC MHST-1

SPECIFICATIONS

- CONCRETE : CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. RATED FOR H-20 LOADING.
- REINFORCEMENT: STRUCTURAL REINFORCEMENT CONFORMING TO ASTM-C-478.
- C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.



PROJECT:	
CUSTOMER:	
ENGINEER:	
ORDER #:	PROJ #:
DATE:	LOCATION:



www.parkusa.com 888-611-PARK

PRECAST CONCRETE MANHOLE
STORM SEWER-MODEL PC MHST - 48" THRU 120"

PM	PC	DRN	ENG	DWG. NO.	REV.
DATE				01/2019	PC MHST-1

DIMENSIONS				
I.D. Size	O.D. Dim "A"	"B" (in)	Top/Bottom Thickness (in) (No Angle, Straight In)	Largest RCP Allowed (No Angle, Straight In)
4' x 4'	5' x 5'	6"	6"	3' x 3'
5' x 5'	6' x 6'	6"	6"	4' x 4'
6' x 6'	7'-4" x 7'-4"	8"	8"	4' x 4'
7' x 7'	8'-4" x 8'-4"	8"	8"	5' x 5'
8' x 8'	9'-4" x 9'-4"	8"	8"	6' x 6'
9' x 9'	10'-4" x 10'-4"	8"	8"	7' x 7'

KEYED NOTES	
MARK	DESCRIPTION
1	CASTING TO BE 24" OR 32" RING AND COVER (AS REQ'D)
2	GRADE RINGS (AS REQ'D)
3	RAMMEK JOINT
4	BLOCKOUT TYPE, SIZE, AND LOCATION WILL VARY PER CUSTOMER AND/OR PLAN SPECIFICATIONS
5	RCP (BY OTHERS)
6	TRANSITIONAL MANHOLE PARK ENVIRONMENTAL WWW.PARKUSA.COM MODEL: TMH

PARK MODEL NO. **TX-XX-X-XXXX-XX**

TYPE OF STRUCTURE
JB - Junction Box
MH - Manhole

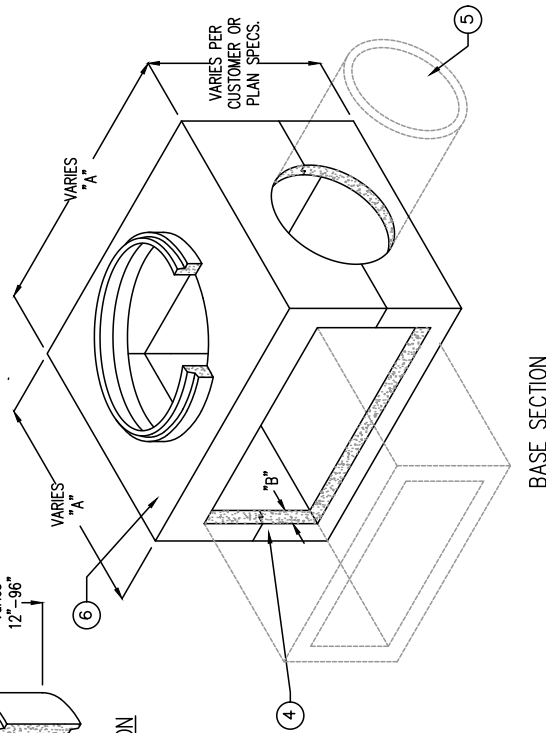
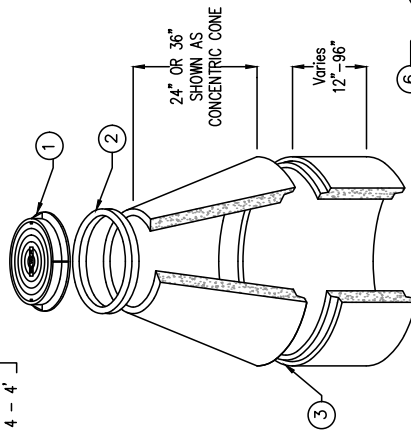
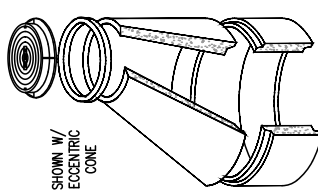
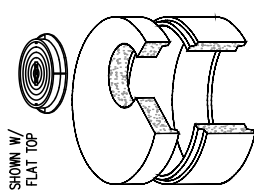
Base Section Size
4 - 4'
5 - 5'
6 - 6'
7 - 7'
8 - 8'

CASTING TYPE
DI - Ductile Iron
CI - Cast Iron

CASTING STYLE
RC - Ring & Cover
RG - Ring & Grate
DG - Dome Grate

SIZE OF R/C OR R/G (DIA.)
01 - 24" 05 - 42"
02 - 32" 06 - 48"
03 - 30" 07 - Other

RISER SECTION SIZE
1 - 1'
2 - 2'
3 - 3'
4 - 4'



SPECIFICATIONS

CONCRETE:
CLASS 1/4 CONCRETE WITH DESIGN STRENGTH OF 4000 PSI AT 28 DAYS WITH 1% AIR ENTRAINMENT. ALL FLOOR AND RISER SURFACES OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.

REINFORCEMENT:
GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

C.I. CASTINGS:
CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30.



PROJECT: ..

CUSTOMER: ..

ENGINEER: ..

ORDER # : ..

DATE: ..

PROJ. # : ..

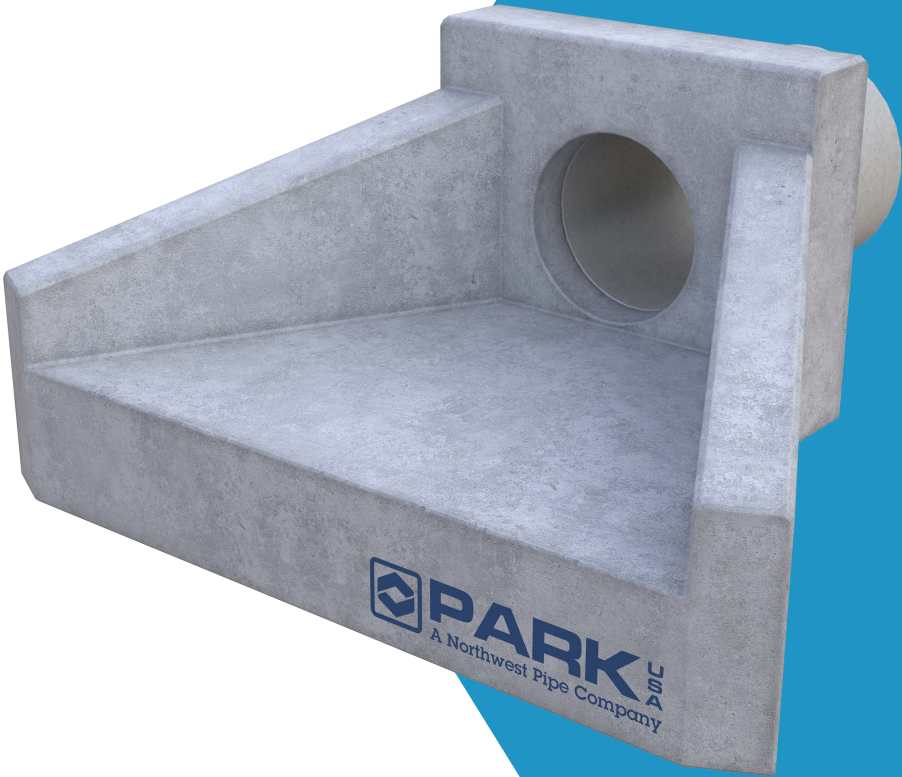
LOCATION: ..

PARK
www.parkusa.com 888-611-PARK

TRANSITIONAL MANHOLE/JUNCTION BOX

PM	PC	DRN	ENG	DWG. NO.	REV.
					TMH-1
DATE 05/2019					

HEADWALLS



ENGINEERING FACTS

GENERAL INFORMATION

Underground storm sewer piping will sometimes penetrate aboveground in the form of a drainage ditch, pond inlet or discharge. There is a potential for soil erosion to occur around the pipe due to the unbridled nature of stormwater. To help prevent this erosion, a Headwall is used to terminate the pipe. The Headwall is a precast concrete structure with wings and a bottom to deflect the water away from the soil.

Headwalls are a type of retaining wall that is commonly found near streams, ponds, or similar waterways. Underground storm sewer piping will sometimes penetrate aboveground in the form of a drainage ditch, pond inlet or discharge.

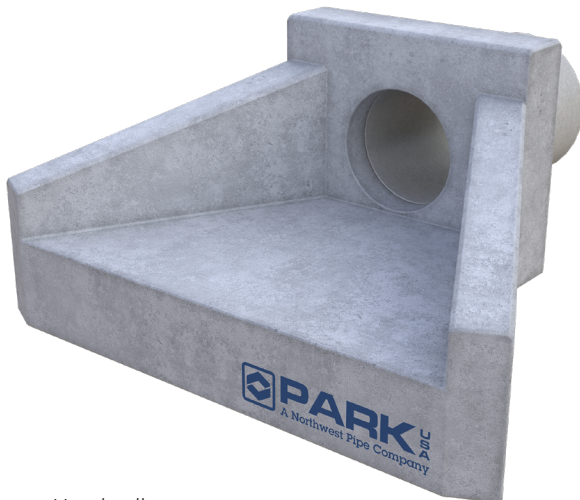
Headwalls are used to provide support for bridges and roadways by anchoring the piping to prevent movement due to hydraulic and soil pressures. The headwall helps prevent soil erosion and scouring from turbulent stormwater and prevents adjacent soil from sloughing into the waterway.

Optional features for headwall include trash screen, security screens, energy dissipators, flap valves, gate valves, stop logs, and handrails.

ParkUSA offers headwalls to meet the needs of any project requirements. Components of an effective stormwater drainage network can include; catch basins, junction boxes, curb inlets, manholes, drainage pipe, headwalls, safety end treatments, detention basins, stormwater quality interceptors, and pump lift stations.

Benefits

- Offers rugged durability for storm water conveyance and erosion prevention
- Available in flared end or three-sided construction (t) provide an opening for stormwater runoff
- Cylindrical flared end sections are seamless pipe ends that taper open to the base
- Three-sided design fits the pipe end to a wall with wings and a flat base
- Terminates drainage pipe



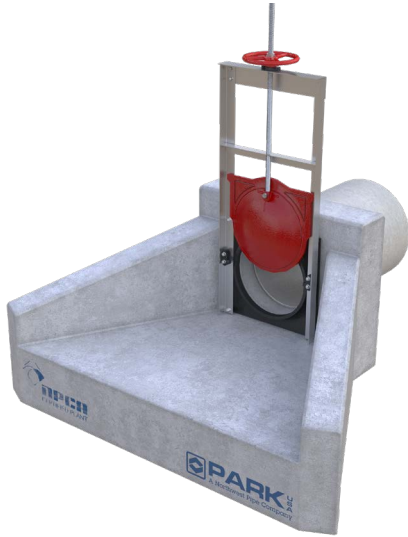
Headwall

Underground storm sewer piping will sometimes penetrate aboveground in the form of a drainage ditch or pond inlet or discharge. There is a potential for soil erosion to occur around the pipe due to the unbridled nature of stormwater.

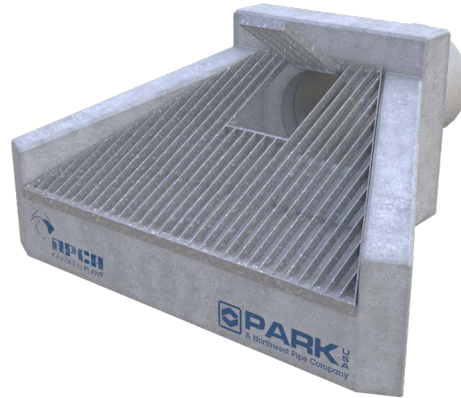
FEATURES

- Single Piece Construction
- Base Section Easy to Install
- Variety of sizes available
- Texas Manufactured
- Quick and easy install

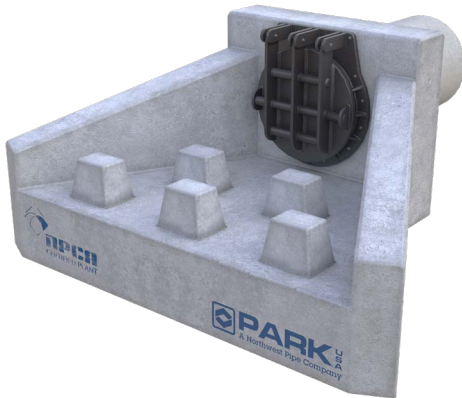
HEADWALL MODELS



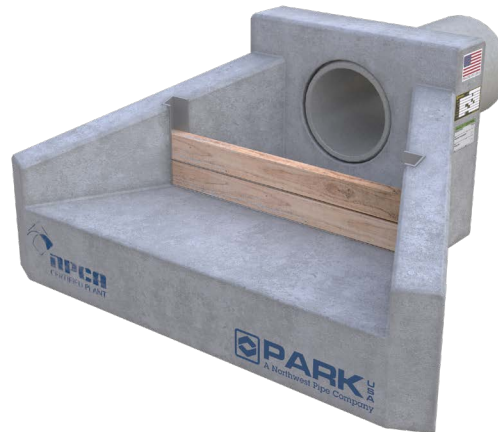
Headwall with Gate Valve & Handrails



Headwall with Trash Screen



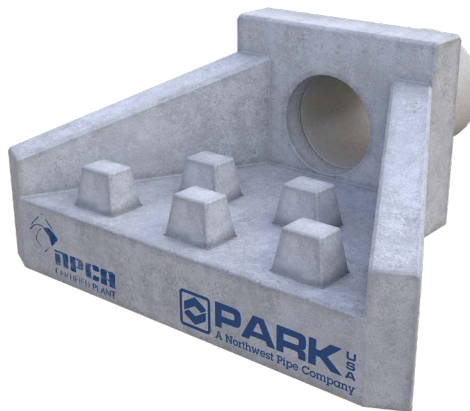
Headwall with Flap Valve



Headwall with Stop Logs

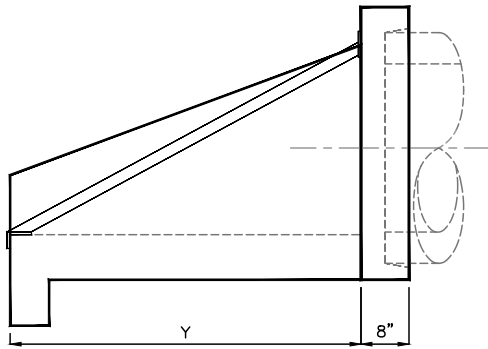


Headwall with Flap Valve & Handrails

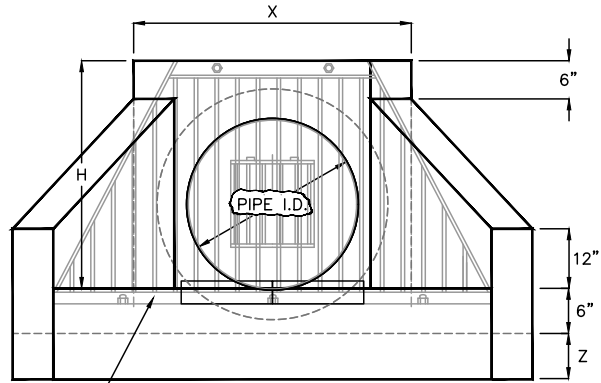


Headwall with Energy Dissipators

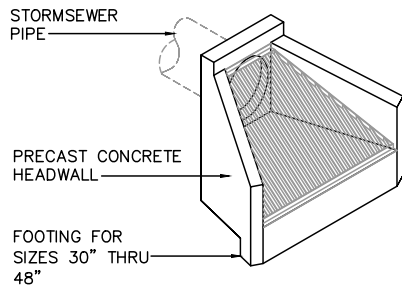
Stormwater
Quality



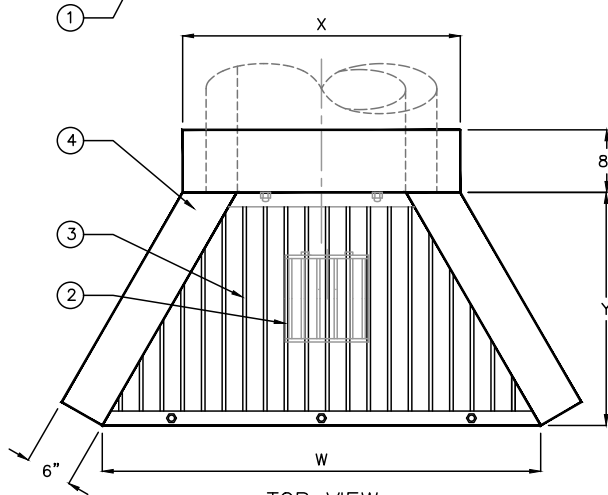
SIDE VIEW



FRONT VIEW



APPLICATION



TOP VIEW

MODEL	PIPE DIA	DIMENSIONS					WEIGHT (LBS)
		H	W	X	Y	Z	
DSA-12	12"	2'-6"	4'-3"	3'-0"	2'-0"	-	2,700
DSA-15	15"	2'-6"	4'-3"	3'-0"	2'-0"	-	2,700
DSA-18	18"	2'-6"	4'-3"	3'-0"	2'-0"	-	2,600
DSA-21	21"	3'-0"	5'-10"	3'-2"	3'-0"	-	4,300
DSA-24	24"	3'-0"	5'-10"	3'-2"	3'-0"	-	4,200
DSA-30	30"	3'-6"	7'-6"	4'-1"	4'-0"	9"	6,200
DSA-36	36"	4'-1"	9'-3"	4'-8"	5'-0"	9"	8,100
DSA-42	42"	4'-11"	12'-6"	5'-10"	6'-0"	12"	11,000
DSA-48	48"	4'-11"	12'-6"	5'-10"	6'-0"	12"	11,000

MARK QTY		DESCRIPTION
1	1	1 1/2" x 1/2" GALVANIZED ANGLE BOLTED TO CONCRETE WITH 1/2" ANCHOR BOLTS
2	1	12"x12" HINGED CLEAN OUT GRATE
3	1	GALVANIZED STEEL DEBRIS GRATE, 1 1/2" x 1/8" BARS @ 2" O.C., 1" CLEAR OPENING
4	1	NAMEPLATE PARKUSA 888-611-PARK WWW.PARKUSA.COM MODEL DSA-1

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SPECIFICATIONS

- CONCRETE :** Class I/II concrete with of design strength of 4500 PSI at 28 days. Unit is of monolithic construction including walls and floor.
- REINFORCEMENT:** Grade 60 reinforced. No. 4 steel rebar to conform to ASTM A615 on required centers or equal. Bar bending and placement shall with the latest ACI standards.
- GRATING:** All steel fabrication shall be in accordance to AWA D1.1. Steel shall be ASTM A36 carbon steel, and hot-dipped galvanized after fabrication in accordance to ASTM A123

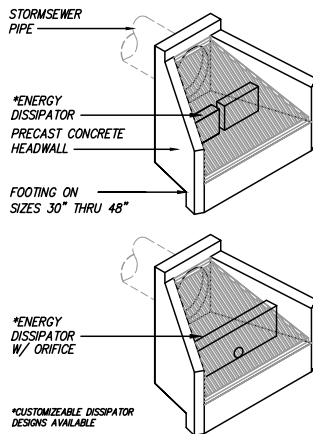
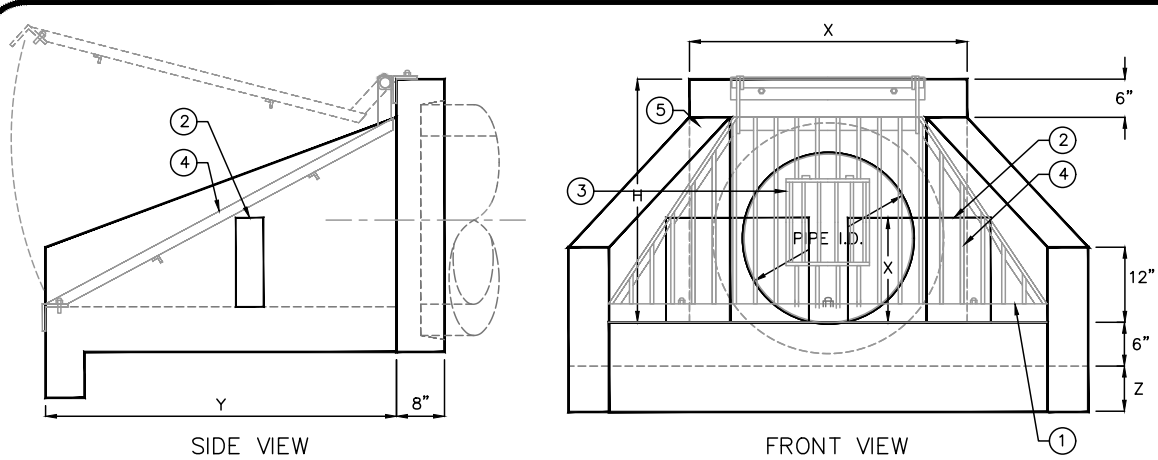
PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: .	LOCATION: .



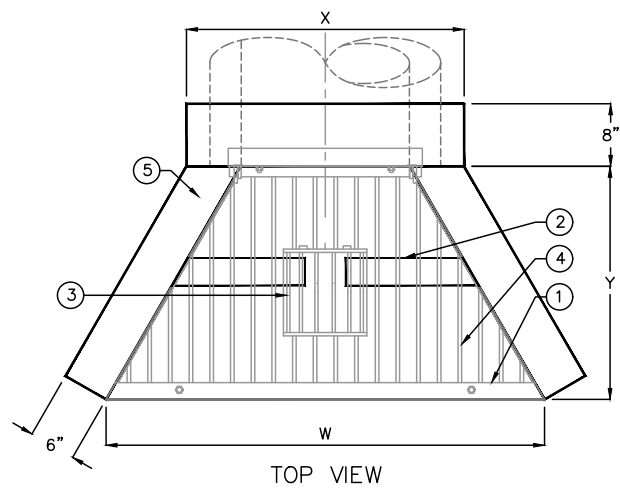
www.parkusa.com 888-611-PARK

DRAINAGE EXIT STRUCTURE
MODEL DSA 12" THRU 48"

PM	PC	DRN	ENG	DWG. NO.	REV.
				DSA-1	
DATE 05/2019					



APPLICATIONS



TOP VIEW

MODEL	PIPE DIA	DIMENSIONS					WEIGHT (LBS)
		H	W	X	Y	Z	
DSB-12	12"	2'-6"	4'-3"	3'-0"	2'-0"	-	2,700
DSB-15	15"	2'-6"	4'-3"	3'-0"	2'-0"	-	2,700
DSB-18	18"	2'-6"	4'-3"	3'-0"	2'-0"	-	2,600
DSB-21	21"	3'-0"	5'-10"	3'-2"	3'-0"	-	4,300
DSB-24	24"	3'-0"	5'-10"	3'-2"	3'-0"	-	4,200
DSB-30	30"	3'-6"	7'-6"	4'-1"	4'-0"	9"	6,200
DSB-36	36"	4'-1"	9'-3"	4'-8"	5'-0"	9"	8,100
DSB-42	42"	4'-11"	12'-6"	5'-10"	6'-0"	12"	11,000
DSB-48	48"	4'-11"	12'-6"	5'-10"	6'-0"	12"	11,000


KEYED NOTES		
MARK	QTY	DESCRIPTION
1	1	2" X 1/4" GALVANIZED ANGLE BOLTED TO CONCRETE WITH 1/2" ANCHOR BOLTS
2	1	ENERGY DISSIPATOR
3	1	12"x12" HINGED CLEANOUT GRATE
4	1	GALVANIZED STEEL DEBRIS GRATE, 2"x1/2" BARS @ 2 1/2" O.C., 2 1/2" CLEAR OPENING
5	1	NAMEPLATE MFG: PARKUSA 888-611-PARK WWW.PARKUSA.COM MODEL DSB

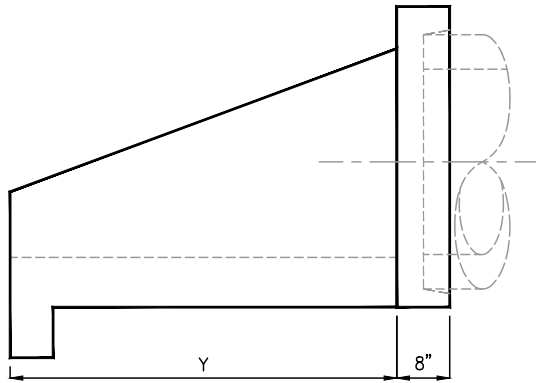


SPECIFICATIONS

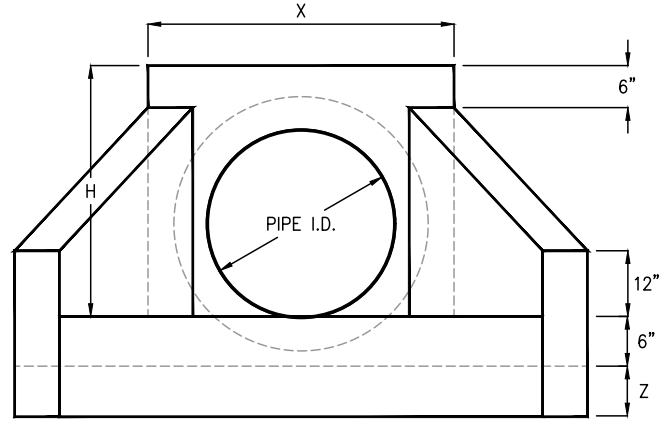
- CONCRETE:** CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION INCLUDING WALLS AND FLOOR.
- REINFORCEMENT:** GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL. BAR BENDING AND PLACEMENT SHALL WITH THE LATEST ACI STANDARDS.
- GRATING:** ALL STEEL FABRICATION SHALL BE IN ACCORDANCE TO AWA D1.1. STEEL SHALL BE ASTM A36 CARBON STEEL, AND HOT-DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE TO ASTM A123

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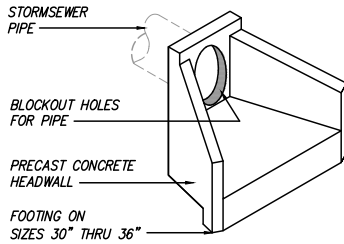
PROJECT:	
CUSTOMER:	
ENGINEER:	
ORDER #:	PROJ #:
DATE:	LOCATION:
 www.parkusa.com 888-611-PARK	
DRAINAGE EXIT STRUCTURE MODEL DSB 12" THRU 48"	
PM	PC
DRN	ENG
DWG. NO.	REV.
DATE 05/2019	DSB-1



SIDE VIEW

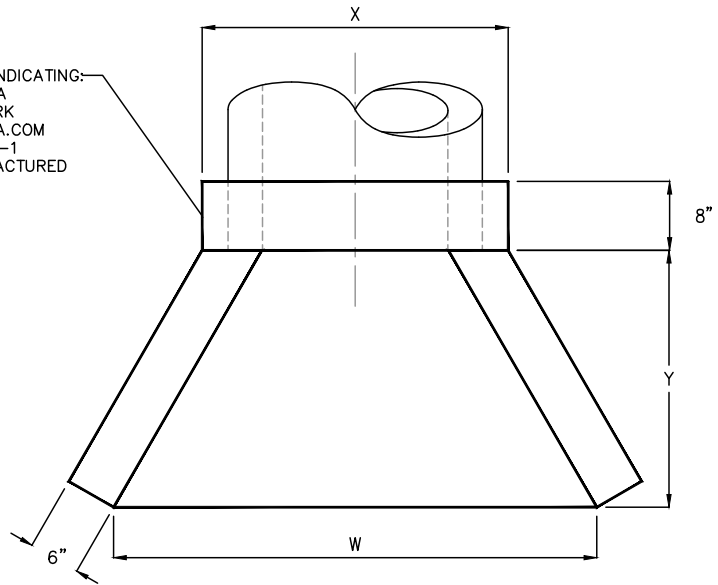


FRONT VIEW



APPLICATION

NAMEPLATE INDICATING:
MFG: PARKUSA
888-611-PARK
WWW.PARKUSA.COM
MODEL: HW-1
DATE MANUFACTURED



TOP VIEW

MODEL	PIPE DIA	DIMENSIONS					WEIGHT (LBS)
		H	W	X	Y	Z	
HW-12	12"	2'-6"	4'-3"	3'-0"	2'-0"	N/A	2,700
HW-15	15"	2'-6"	4'-3"	3'-0"	2'-0"	N/A	2,700
HW-18	18"	2'-6"	4'-3"	3'-0"	2'-0"	N/A	2,600
HW-21	21"	3'-0"	5'-10"	3'-2"	3'-0"	N/A	4,300
HW-24	24"	3'-0"	5'-10"	3'-2"	3'-0"	N/A	4,200
HW-30	30"	3'-6"	7'-6"	4'-1"	4'-0"	9"	6,200
HW-36	36"	4'-1"	9'-3"	4'-8"	5'-0"	9"	8,100
HW-42	42"	4'-11"	12'-6"	5'-10"	6'-0"	12"	11,000
HW-48	48"	4'-11"	12'-6"	5'-10"	6'-0"	12"	11,000

SPECIFICATIONS

CONCRETE: CLASS II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION INCLUDING WALLS AND FLOOR.

REINFORCEMENT: GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL. BAR BENDING AND PLACEMENT SHALL WITH THE LATEST ACI STANDARDS.



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PROJECT: .
CUSTOMER: .
ENGINEER: .
ORDER #: . PROJ #: .
DATE: . LOCATION: .

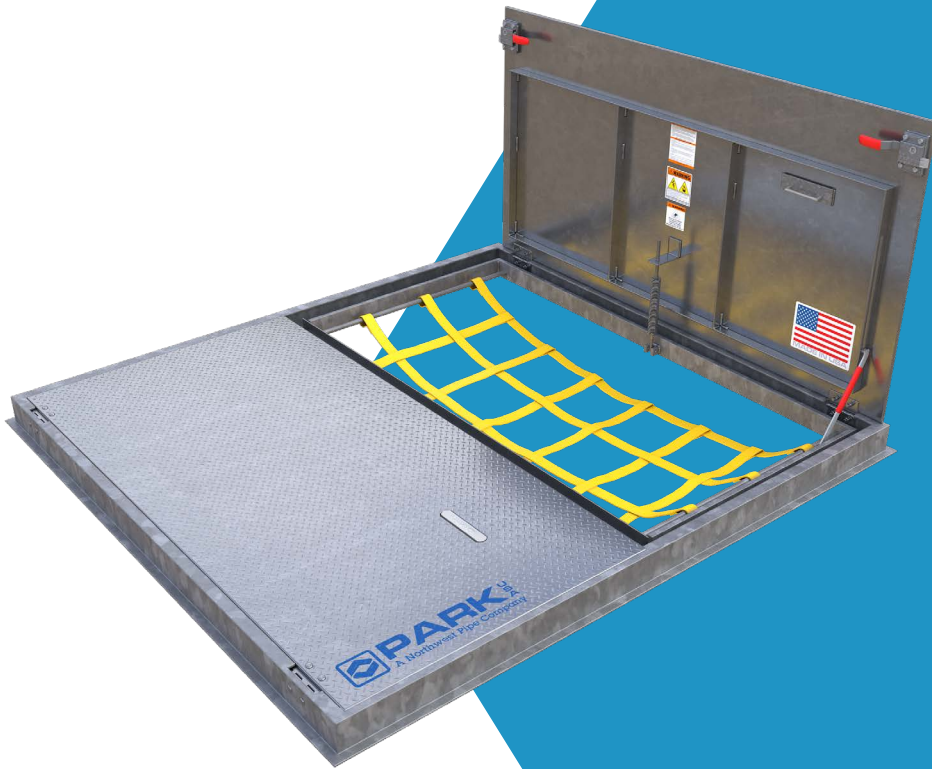


www.parkusa.com 888-611-PARK

HEADWALL FOR STORMWATER PIPING
MODEL HW 12" THRU 48"

PM	PC	DRN	ENG	DWG. NO.	REV.
.	.	.	.		
DATE 05/2019				HW-1	

COVERS & HATCHWAYS



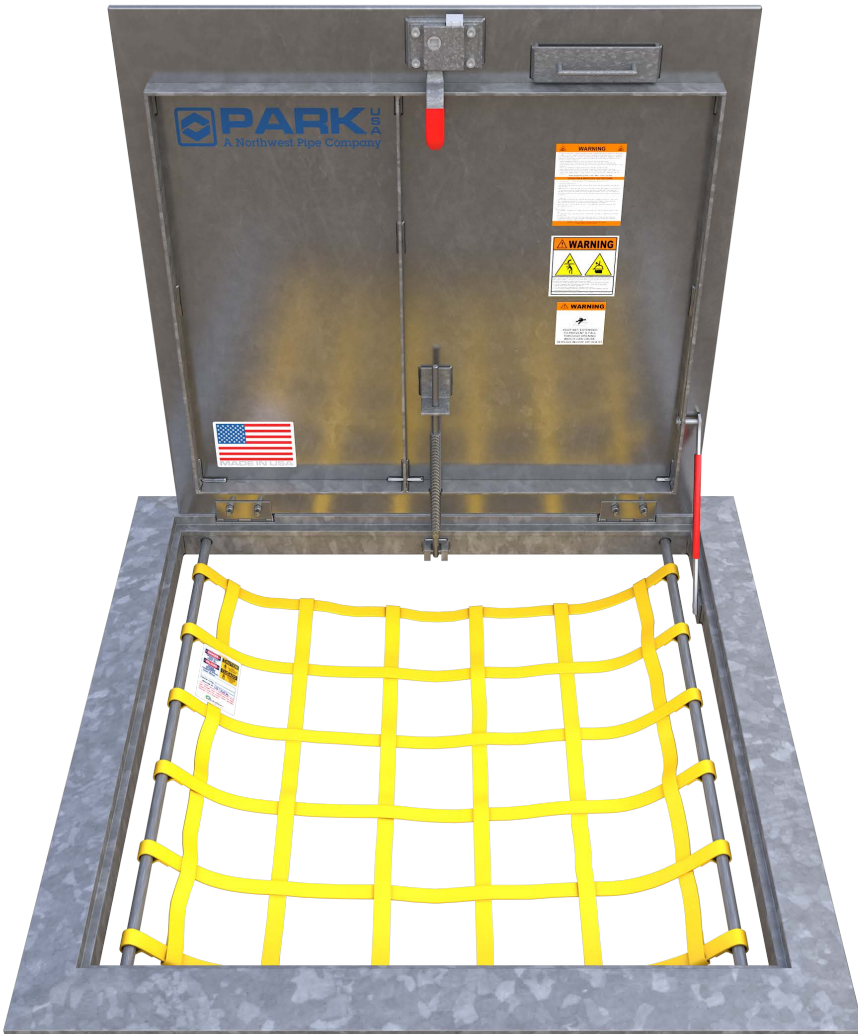

PARK
USA
A Northwest Pipe Company

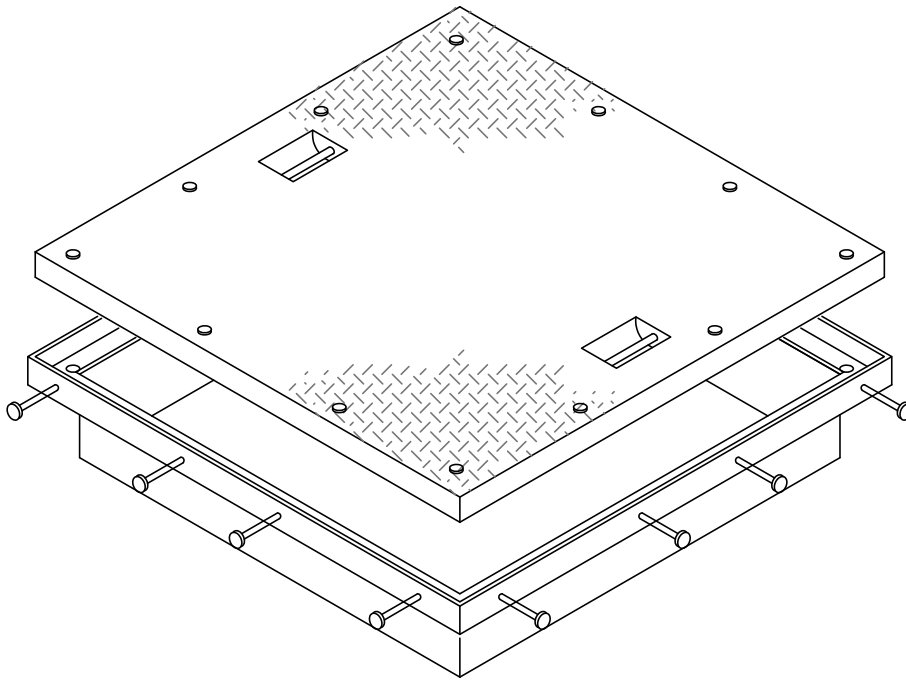
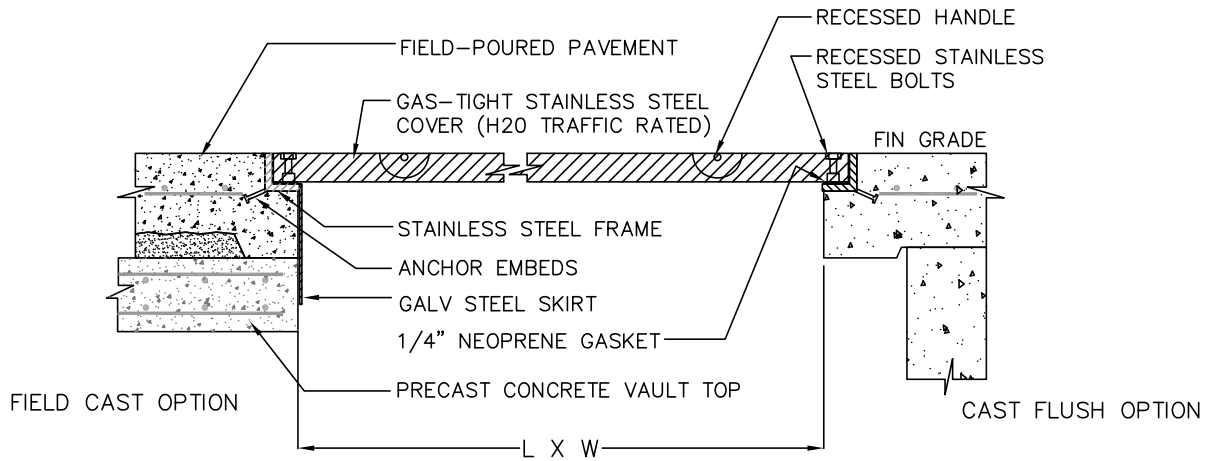
ENGINEERING FACTS

GENERAL INFORMATION

ParkUSA is a leading supplier of construction castings to many cities, counties, and states. Cast iron and ductile iron grates, covers, and frames from top manufacturers are kept in stock and available through special order. Contact ParkUSA for your project requirements.

ParkUSA is a leading supplier of construction castings to many cities, counties, and states. Cast iron and ductile iron grates, covers, and frames.





MODEL	LENGTH L	WIDTH W
AHSS-WT-2424	24"	24"
AHSS-WT-2436	24"	36"
AHSS-WT-3030	30"	30"
AHSS-WT-3036	30"	36"
AHSS-WT-3048	30"	48"
AHSS-WT-3636	36"	36"
AHSS-WT-3648	36"	48"
AHSS-WT-4848	48"	48"
AHSS-WT-6060	60"	60"
AHSS-WT-_____		

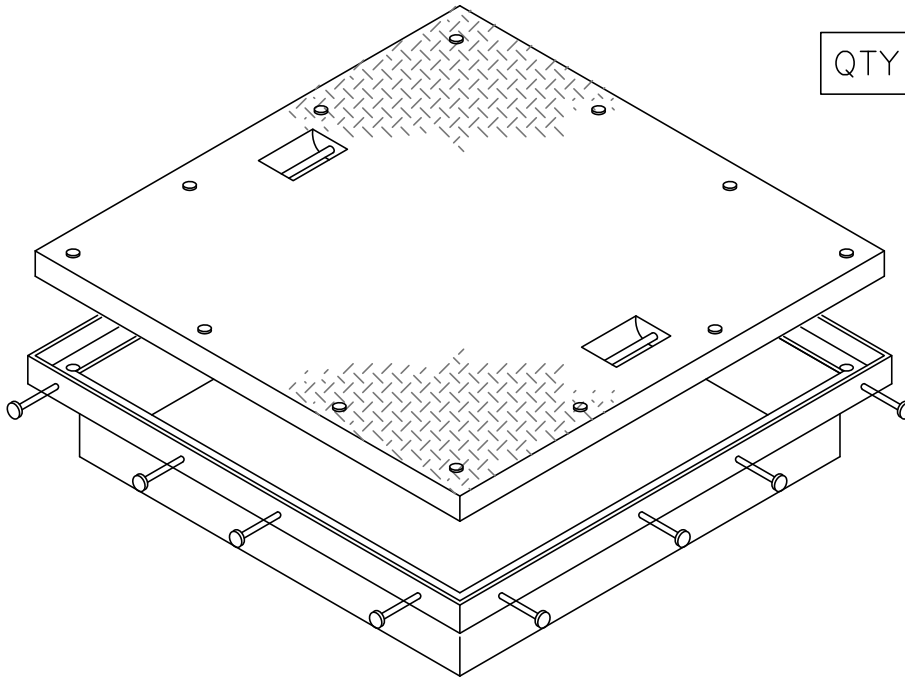
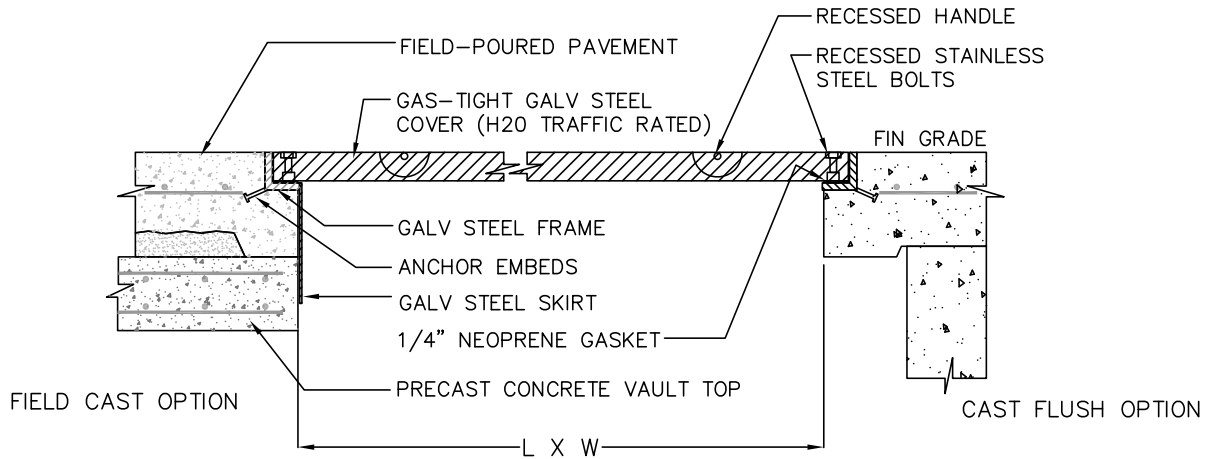
PROJECT:	.
CUSTOMER:	.
ENGINEER:	.
ORDER #:	.
PROJ #:	.
DATE:	.



ACCESS COVER WATERTIGHT
H2O RATED - BOLT-DOWN, GASKETED


PM	DRN	ENG	DWG. NO.	REV.
07/2018				

Stormwater
Quality



QTY 3

MODEL	LENGTH	WIDTH
	L	W
AHSS-WT-2424	24"	24"
AHSS-WT-2436	24"	36"
AHSS-WT-3030	30"	30"
AHSS-WT-3036	30"	36"
AHSS-WT-3048	30"	48"
AHSS-WT-3636	36"	36"
AHSS-WT-3648	36"	48"
AHSS-WT-4848	48"	48"
AHSS-WT-6060	60"	60"
AHSS-WT-_____		

AHSS-WT-3036-109193-1600 WEST LOOP HOTEL-S1601128B	PROJECT: 1600 WEST LOOP HOTEL			
	LOCATION: HOUSTON, TX			
	CUSTOMER: DYNAMIC SYSTEMS			
	ENGINEER: THOMPSON COMPANY			
	ORDER #:	109193	PROJ #: S-16-01128-B	
	DATE:	09/28/2016		
	 <p>888.611.PARK www.park-usa.com</p>			
	<p>ACCESS COVER WATERTIGHT H2O RATED - BOLT-DOWN, GASKETED</p>			
PM	DRN	ENG	DWG. NO.	REV.
JPN	CH	.	AHSS-WT-109193	A
DATE	09/16			

ANGLE FRAME PEDESTRIAN LOADING DOUBLE LEAF

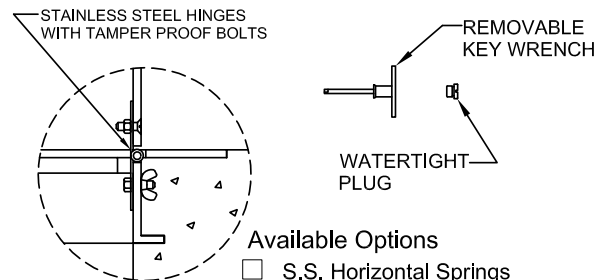
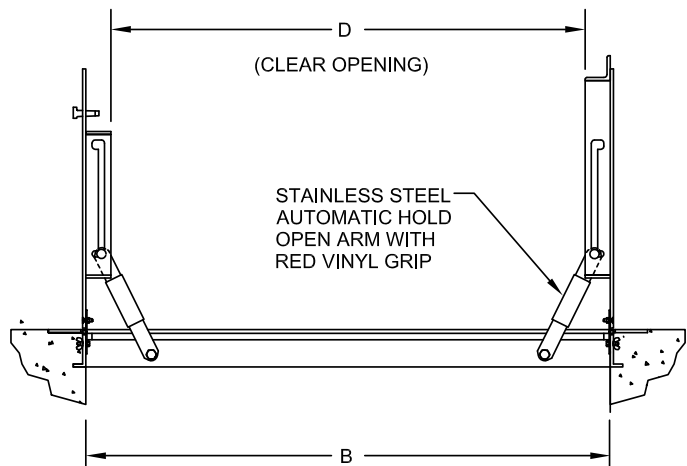
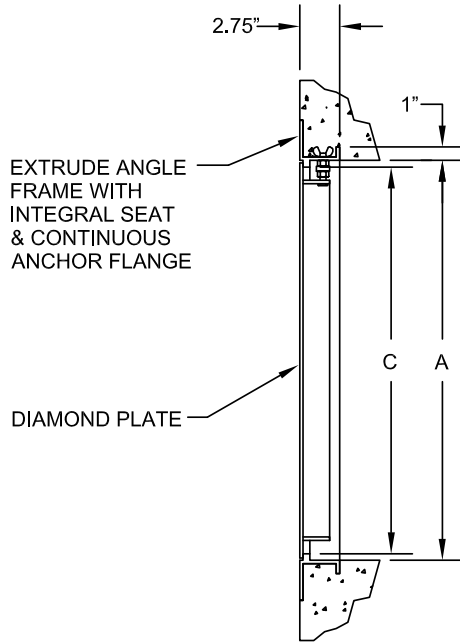
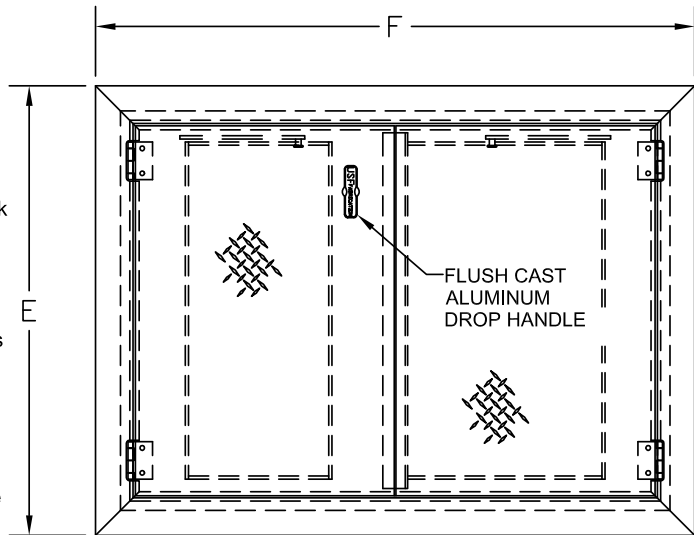
Stormwater
Quality

General Information:

The angle frame floor access doors are designed for interior and exterior applications where watertightness is not required.

Specifications:

The floor access doors shall be Model APD by Park Environmental Equipment (888-611-PARK), with the size being specified on the plans. Door leafs shall be 1/4 inch thick aluminum diamond plate reinforced to a 300 p.s.f. live load. The frame shall be extruded aluminum with an integral anchor flange and door seat on all four (4) sides. The floor access doors shall be equipped with a flush aluminum drop handle that does not protrude above the cover, and stainless steel automatic hold open arms with red vinyl grips to lock the covers in the open position. The doors shall have stainless steel hinges with stainless steel tamper proof bolts and nuts. A staple for a padlock shall be supplied for security. All parts of the frame and cover shall be aluminum or stainless steel. Installation shall be in accordance with the manufacturer's attached instructions. Manufacturer shall guarantee against defects in materials and workmanship for a period of ten (10) years.



Available Options

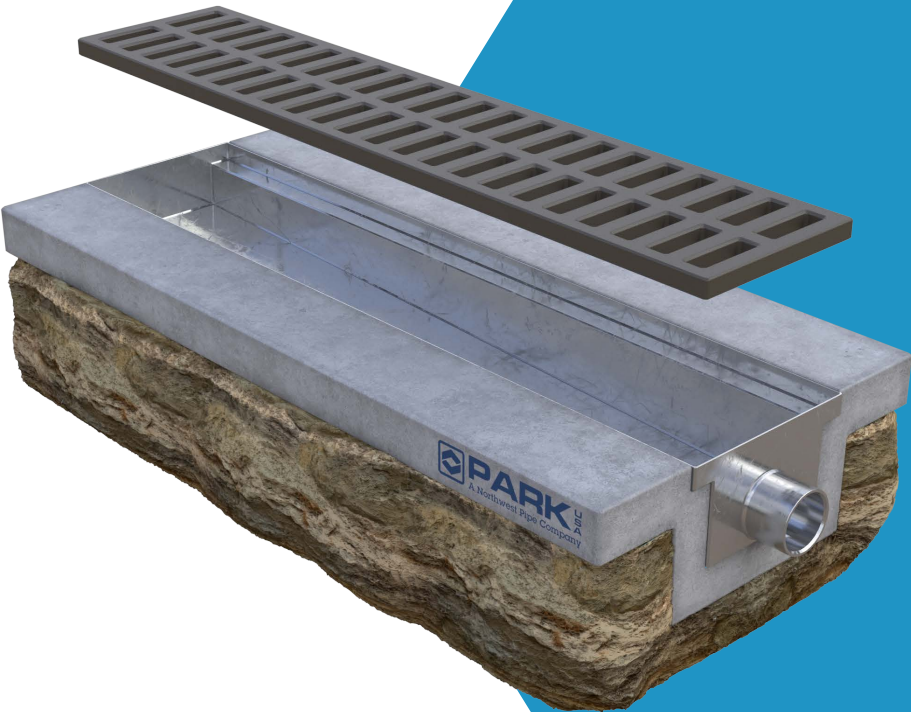
- S.S. Horizontal Springs
- S.S. Slam Lock
- Bituminous paint on area in contact with concrete
- Other _____

MODEL	Thk in.	DIMENSIONS (in)						WEIGHT Lbs.
		A	B	C	D	E	F	
APD-30X48	1/4	30	48	29	44	36	54	85
APD-30X54	1/4	30	54	29	49	36	60	90
APD-36X48	1/4	36	48	35	43	42	54	95
APD-36X60	1/4	36	60	35	54	42	66	115
APD-36X72	1/4	36	72	35	68	42	78	140
APD-42X48	1/4	42	48	41	42	48	54	110
APD-42X64	1/4	42	84	41	77	48	90	200
APD-48X48	1/4	48	48	47	41	54	54	120
APD-48X54	1/4	48	54	47	47	54	60	130
APD-48X72	1/4	48	72	47	65	54	78	170
APD-60X60	1/4	60	60	59	54	66	68	175

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ALUMINUM DUAL LEAF HATCHWAY MODEL APD

TRENCH GRATES



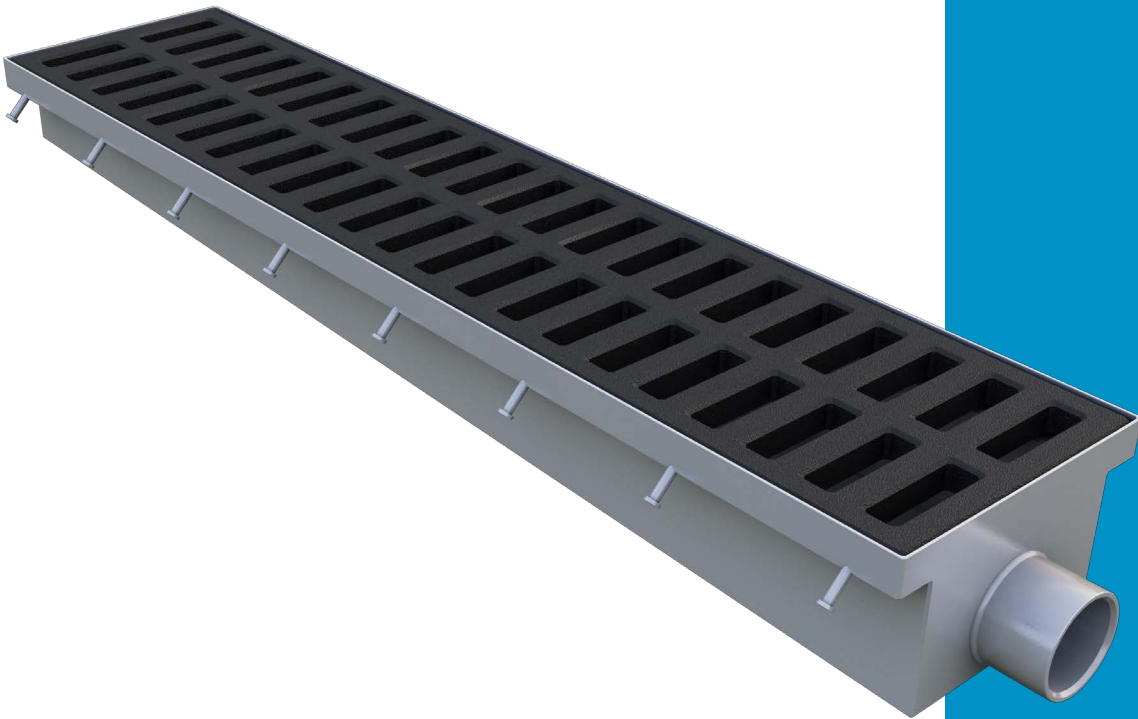

PARK
USA
A Northwest Pipe Company

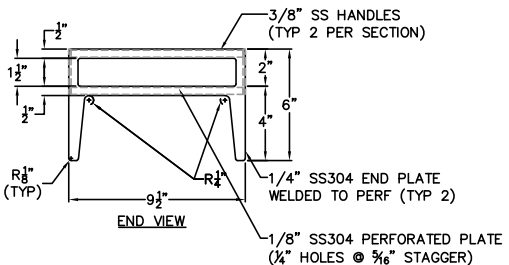
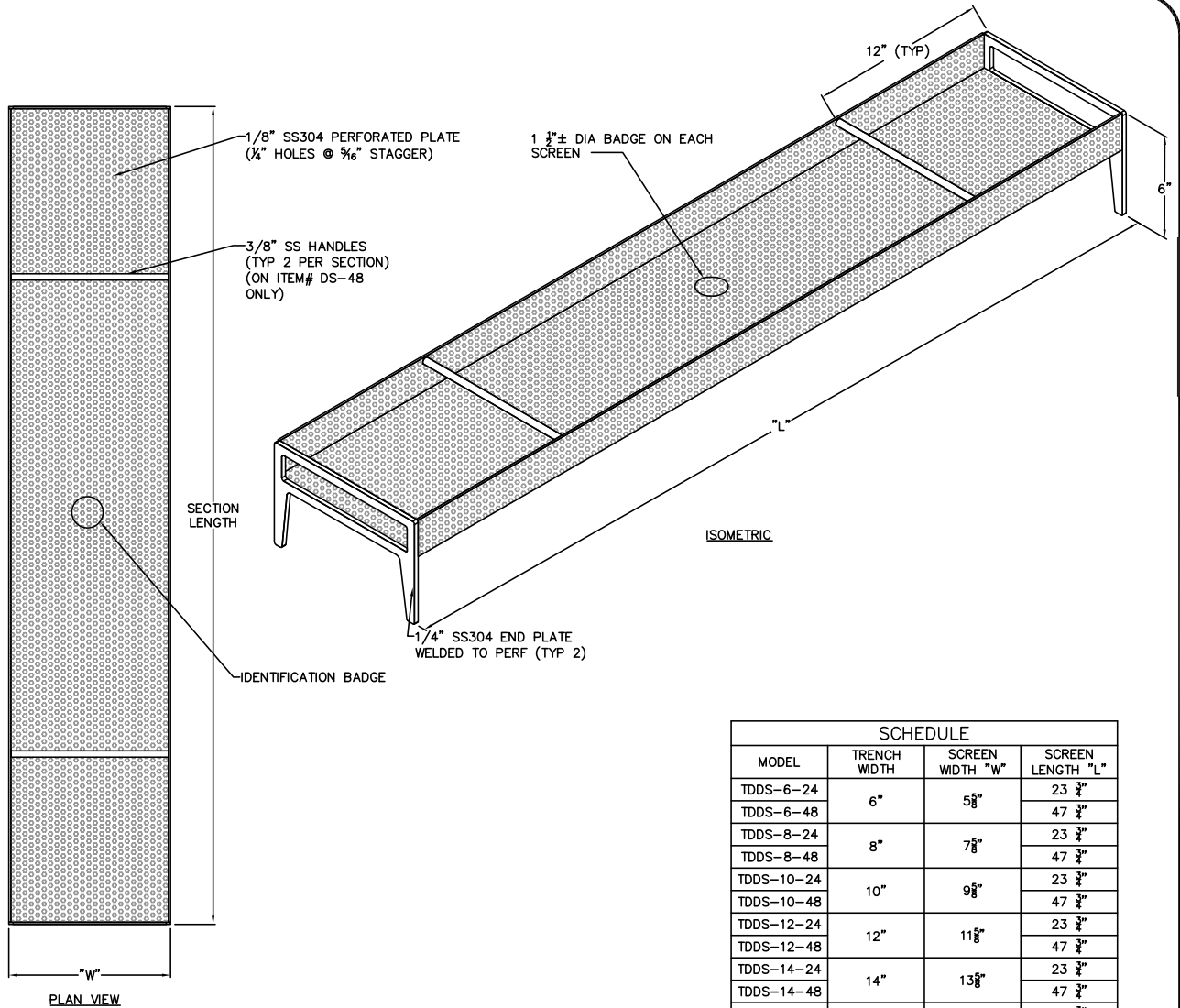
ENGINEERING FACTS

GENERAL INFORMATION

ParkUSA FloTrench are floor drains that are used for the rapid evacuation of surface water, containment of utility lines or chemical spills. Employing a grating, or solid cover, that is flush with the adjoining surface, this drain is commonly made of Concrete, Polyethylene, Steel or Fiberglass to aid in channel crafting and slope formation. ParkUSA can manufacture trench drains in standard or even custom configurations. Our project managers work with each customer to ensure that each trench drain meets the exact requirements for the application.

ParkUSA FloTrench are floor drains that are used for the rapid evacuation of surface water, containment of utility lines or chemical spills. Employing a grating or solid cover, that is flush with the adjoining surface, this drain is commonly made of Concrete, Polyethylene, Steel or Fiberglass to aid in channel crafting and slope formation.





SCHEDULE			
MODEL	TRENCH WIDTH	SCREEN WIDTH "W"	SCREEN LENGTH "L"
TDDS-6-24	6"	5 5/8"	23 3/4"
TDDS-6-48			47 3/4"
TDDS-8-24	8"	7 5/8"	23 3/4"
TDDS-8-48			47 3/4"
TDDS-10-24	10"	9 5/8"	23 3/4"
TDDS-10-48			47 3/4"
TDDS-12-24	12"	11 5/8"	23 3/4"
TDDS-12-48			47 3/4"
TDDS-14-24	14"	13 5/8"	23 3/4"
TDDS-14-48			47 3/4"
TDDS-16-24	16"	15 5/8"	23 3/4"
TDDS-16-48			47 3/4"
TDDS-18-24	18"	17 5/8"	23 3/4"
TDDS-18-48			47 3/4"
TDDS-20-24	20"	19 5/8"	23 3/4"
TDDS-20-48			47 3/4"
TDDS-22-24	22"	21 5/8"	23 3/4"
TDDS-22-48			47 3/4"

NOTE:
MATERIAL: SS304
FINISH: RAW

PROJECT: _____
 CUSTOMER: _____
 ENGINEER: _____
 ORDER #: _____
 PROJ #: _____
 DATE: _____

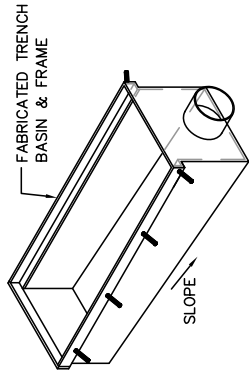


TRENCH DRAIN DEBRIS SCREEN
MULTI-SECTIONAL

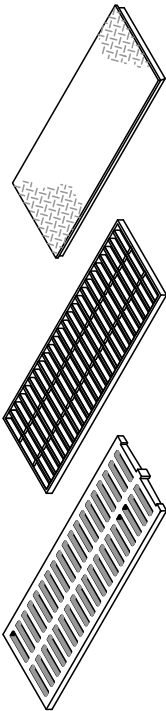
TDDS-01.DWG	PM	DRN	ENG	DWG. NO. TDDS-01	REV. A
	DATE	04/17			

MODEL NUMBER

MODEL NUMBER: TG-X X X XX XXX XX
 COVER/GRATE STYLE
 LOAD RATING
 FRAME/BASIN STYLE
 OPTIONS
 LENGTH (L) in
 WIDTH (TW) in



- LOAD RATING**
- P - PEDESTRIAN DUTY
 - H - HEAVY DUTY (H20)
 - X - EXTRA HEAVY DUTY (H40)



- GRATING**
- A - CAST IRON (PHX)
 - B - DUCTILE IRON (PHX)
 - J - BRONZE (P)
 - Z - NONE

- BAR GRATING**
- C - GALVANIZED STEEL (PHX)
 - D - STAINLESS STEEL (PH)
 - E - FIBERGLASS (P)

- SOLID COVER**
- F - GALVANIZED STEEL (PHX)
 - G - STAINLESS STEEL (PH)
 - H - FIBERGLASS (P)

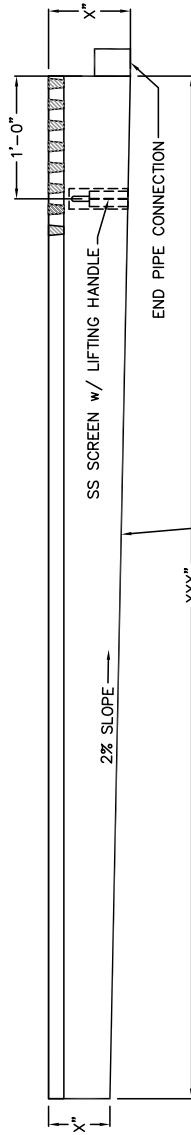
- FRAME/BASIN STYLE**
- A - GALVANIZED STEEL
 - B - STAINLESS STEEL
 - C - HD POLYETHYLENE
 - D - POLYPROPYLENE
 - E - FIBERGLASS
 - Z - NONE

COVER/GRATE STYLE

FRAME/BASIN STYLE

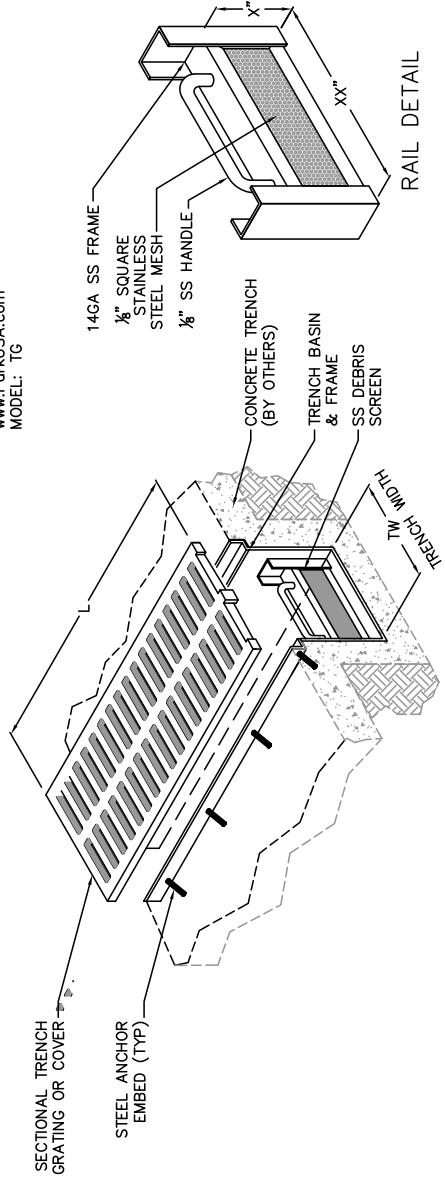
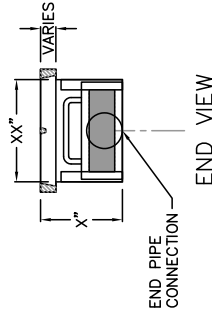
OPTIONS

- SC - STAINLESS STEEL SCREEN
- BD - BOLT DOWN GRATE/COVER
- VP - VANDAL PROOF
- AD - ADA APPROVED



PREFABRICATED TRENCH SYSTEM
 MFG: ParkUSA
 888-611-PARK
 www.ParkUSA.com
 MODEL: TG

SIDE VIEW



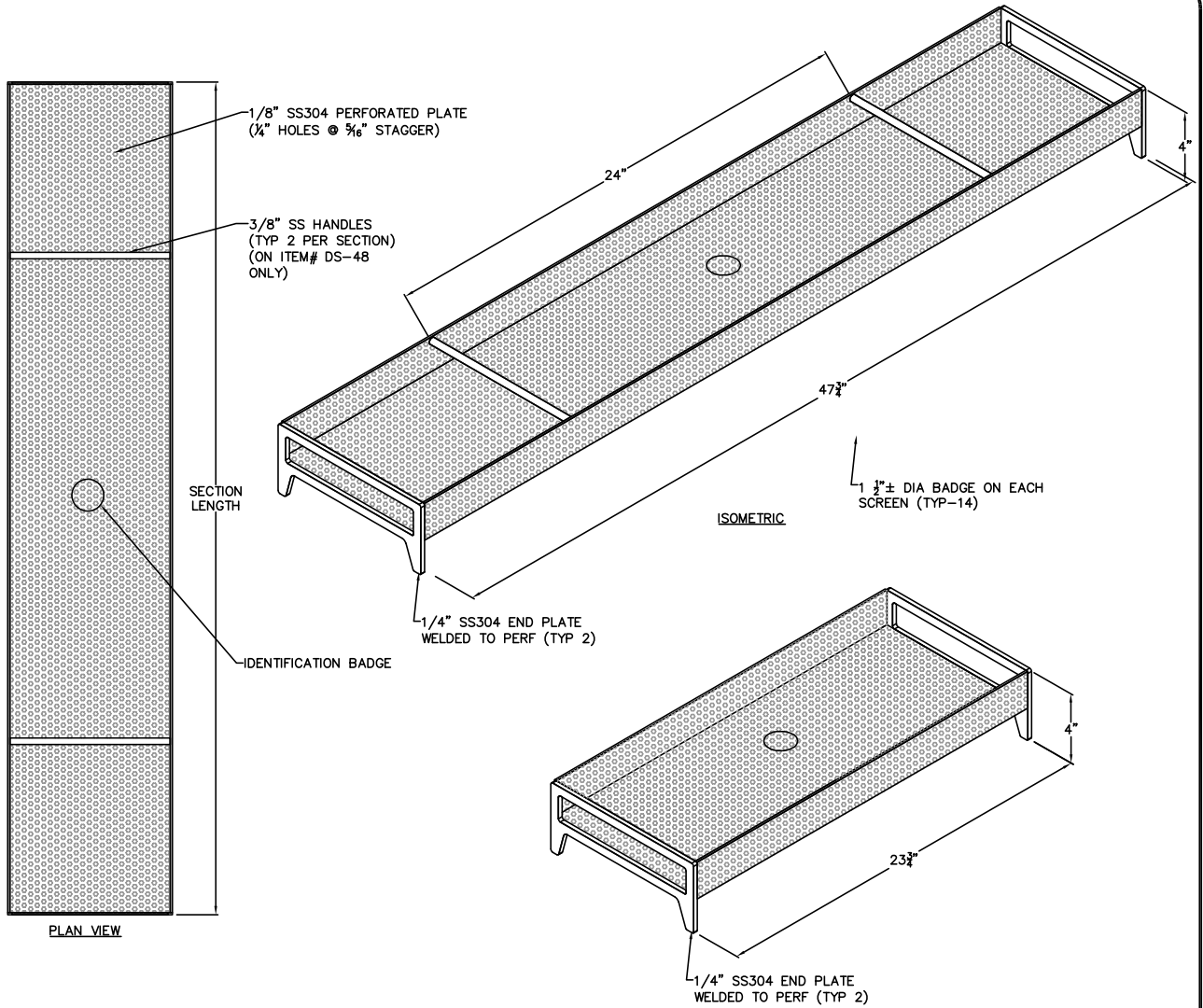
© Park 2017

PROJECT:	
CUSTOMER:	
ORDER #:	PROJ #:
DATE:	

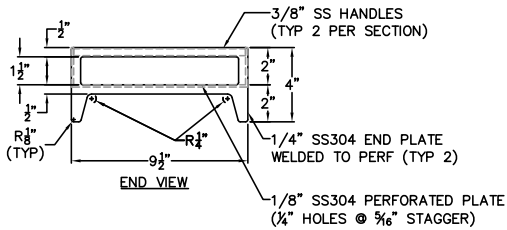
888.611.PARK
 www.park-usa.com
PARK
 DESIGN FOR WATER

PREFABRICATED TRENCH SYSTEM
 MODEL TDEDS

PM	DRN	ENG	DWG. NO.	REV.
			TDEDS-01	A
DATE			06/17	



SCHEDULE		
TAG	SECTION QTY	SECTION LENGTH
DS-48	10	47 3/4"
DS-24	3	23 3/4"



NOTE:
MATERIAL: SS304
FINISH: RAW

PROJECT:
CUSTOMER:
ENGINEER:
ORDER #:
PROJ #:
DATE:



TRENCH DRAIN DEBRIS SCREEN
MULTI-SECTIONAL

TGS-01.DWG	PM	DRN	ENG	DWG. NO. TGS-01	REV.
	DATE	07/16			B

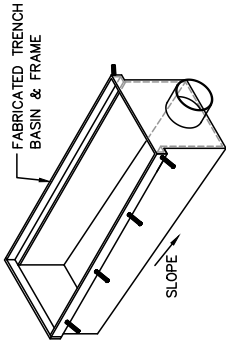
TGS-01

MODEL NUMBER

MODEL NUMBER: TG-X X X XX XX XX X
 COVER/GRATE STYLE (TG) TW+2"
 LOAD RATING (L) in
 FRAME/BASIN STYLE (TW) in
 OPTIONS

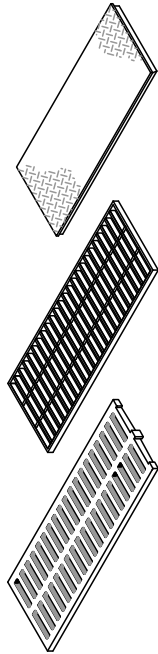
*** SPECIFIED BY CUSTOMER ***

- SC - STAINLESS STEEL SCREEN
- BD - BOLT DOWN GRATE/COVER
- VP - VANDAL PROOF
- AD - ADA APPROVED



- A - GALVANIZED STEEL
- B - STAINLESS STEEL
- C - HD POLYETHYLENE
- D - POLYPROPYLENE
- E - FIBERGLASS
- Z - NONE

- LOAD RATING**
- P - PEDESTRIAN DUTY
 - H - HEAVY DUTY (H20)
 - X - EXTRA HEAVY DUTY (H40)



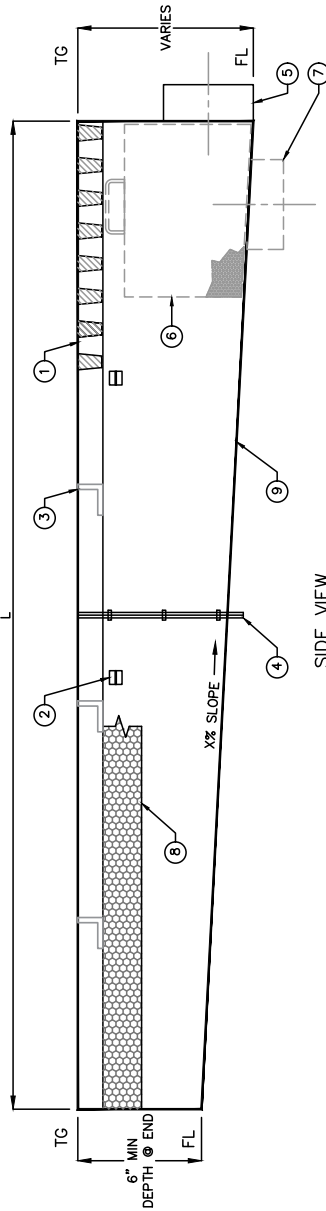
- BAR GRATING**
- C - GALVANIZED STEEL (PHX)
 - D - STAINLESS STEEL (PH)
 - E - FIBERGLASS (P)

- GRATING**
- A - CAST IRON (PHX)
 - B - DUCTILE IRON (PHX)
 - J - BRONZE (P)
 - Z - NONE

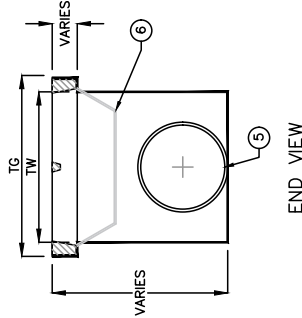
COVER/GRATE STYLE

FRAME/BASIN STYLE

OPTIONS



SIDE VIEW



END VIEW

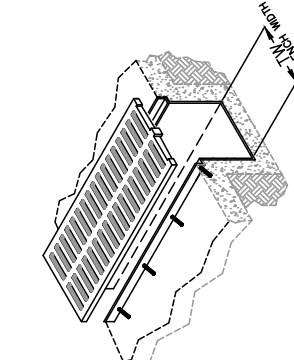


MARK QTY	DESCRIPTION
1	XX"W GRATING W/ XX"W TRENCH OPENING, X" THK, X' LONG
2	LEVELING BRACKETS (48" NOMINAL SPACING)
3	REMOVABLE WALL SUPPORTS (24" NOMINAL SPACING)
4	BOLTED SECTIONS (TYP)
5	1" OUTLET PIPE CONNECTION
6	OPTIONAL SS SCREEN WITH LIFT-OUT HANDLES
7	BOTTOM PIPE CONNECTION
8	OPTIONAL STAINLESS STEEL DEBRIS TRAY
9	PREFABRICATED TRENCH SYSTEM MFG: PARKUSA 888-611-PARK WWW.PARKUSA.COM MODEL: TG-1

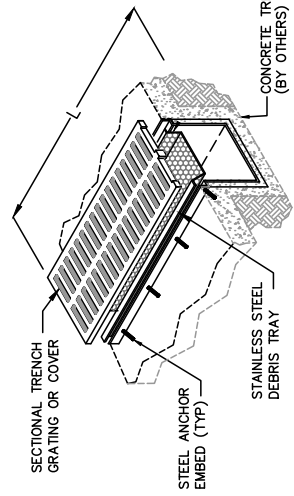
PROJECT:
 CUSTOMER:
 ENGINEER:
 ORDER #: PROJ #:
 DATE: LOCATION:

PARK
 www.parkusa.com 888-611-PARK
 PREFABRICATED TRENCH SYSTEM
 MODEL TG-1

PM PC DRN ENG DWG. NO.
 DATE 05/2019 REV.
 TG-1



ISOMETRIC VIEW: STANDARD



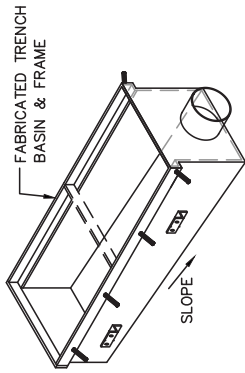
ISOMETRIC VIEW: W/ SS DEBRIS TRAY

Stormwater Quality

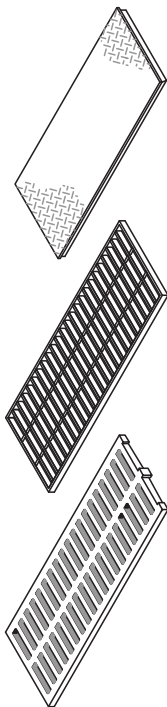
MODEL NUMBER

MODEL NUMBER: TG-X X X XX XXXX XX XX
 COVER/GRATE STYLE (TG) TW+2"
 LOAD RATING LENGTH (L) in
 FRAME/BASIN STYLE WIDTH (TW) in

*** SPECIFIED BY CUSTOMER ***



- LOAD RATING**
- P - PEDESTRIAN DUTY
 - H - HEAVY DUTY (H20)
 - X - EXTRA HEAVY DUTY (H40)



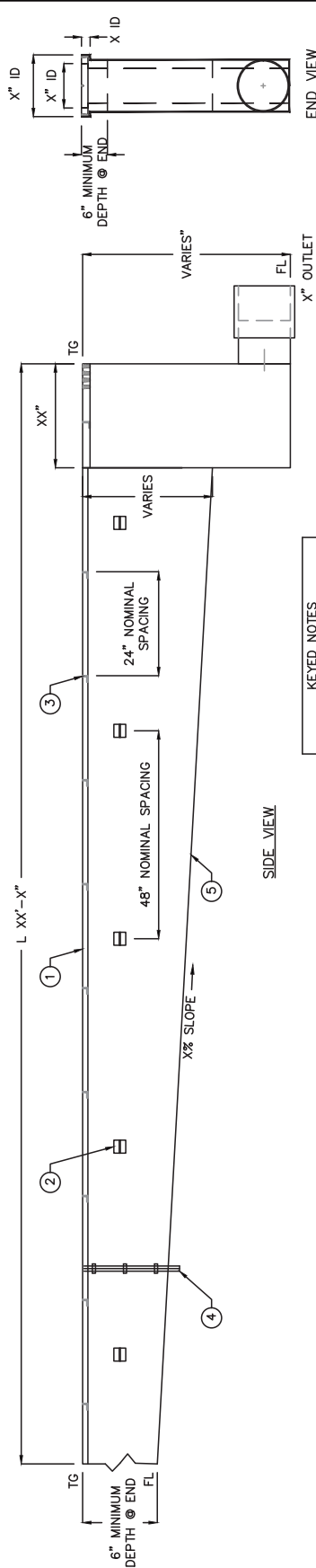
- GRATING**
- A - CAST IRON (PHX)
 - B - DUCTILE IRON (PHX)
 - J - BRONZE (P)
 - Z - NONE
- SOLID COVER**
- F - GALVANIZED STEEL (PHX)
 - G - STAINLESS STEEL (PH)
 - H - FIBERGLASS (P)
- BAR GRATING**
- C - GALVANIZED STEEL (PHX)
 - D - STAINLESS STEEL (PH)
 - E - FIBERGLASS (P)

- FRAME/BASIN STYLE**
- A - GALVANIZED STEEL
 - B - STAINLESS STEEL
 - C - HD POLYETHYLENE
 - D - POLYPROPYLENE
 - E - FIBERGLASS
 - Z - NONE

- OPTIONS**
- SC - STAINLESS STEEL SCREEN
 - BD - BOLT DOWN GRATE/COVER
 - VP - VANDAL PROOF
 - AD - ADA APPROVED
 - ZZ - NONE

COVER/GRATE STYLE

FRAME/BASIN STYLE



MARK QTY	DESCRIPTION
1	XX"W GRATING W/ XX"W TRENCH OPENING, X" THK, X' LONG
2	LEVELING BRACKETS (AS REQ'D)
3	REMOVEABLE WALL SUPPORTS (AS REQ'D)
4	BOLTED SECTIONS (TYP)
5	PREFABRICATED TRENCH SYSTEM MFG: PARKUSA, INC. WWW.PARKUSA.COM MODEL: TG-CB

PROJECT: . . .
 CUSTOMER: . . .
 ENGINEER: . . .
 ORDER # . . .
 DATE: . . .

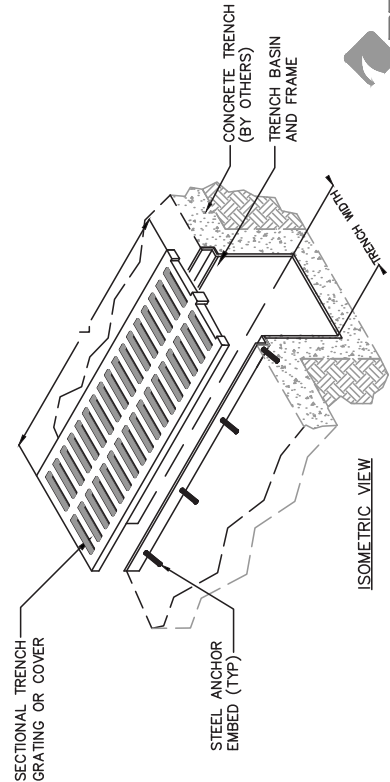
PROJ. # . . .
 LOCATION: . . .

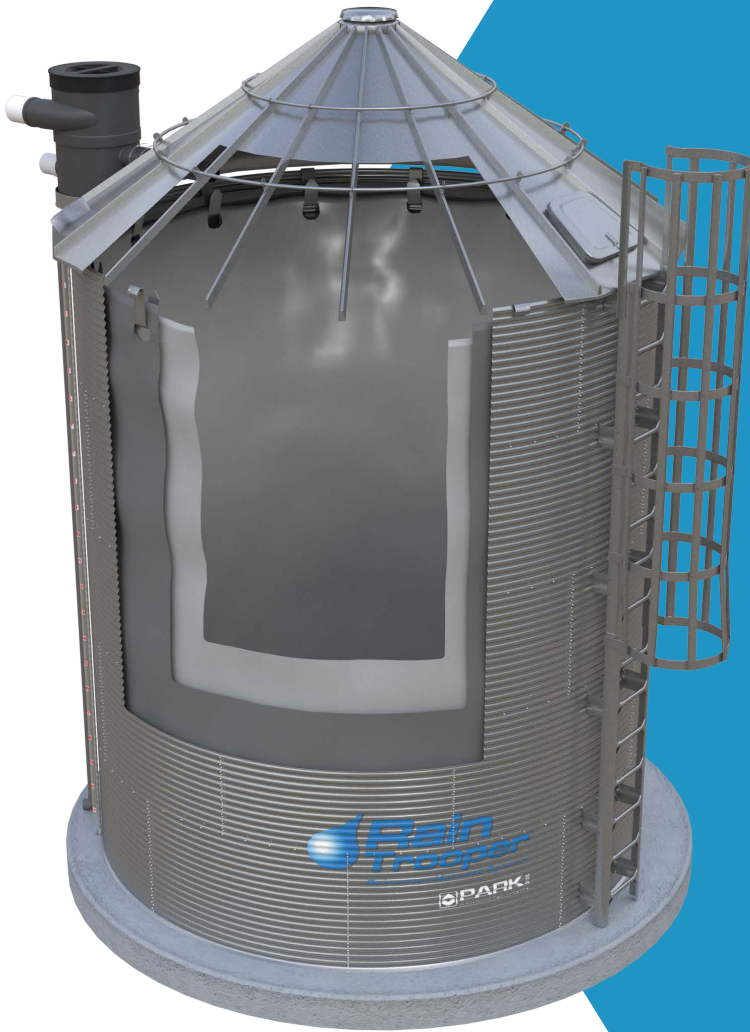


www.parkusa.com 888-611-PARK

PREFABRICATED TRENCH SYSTEM
 MODEL TG-CB

PM	PC	IDR	ENG	DWG. NO.	REV.
DATE 05/2019					TG-CB





PARK USA
A Northwest Pipe Company

ENGINEERING FACTS

GENERAL INFORMATION

The continuous population growth and the growing number of extreme droughts across the world have led to a great increase in consumption of potable and non-potable water. Conservation of rainwater is becoming critical in parts of the United States to meet the growing water demands. Living in a country where water has always been readily available, most people do not realize that rainwater can be used for nearly all non-potable applications including irrigation, toilet flushing, bathroom sinks, mechanical systems, washing machines, car washing, custodial uses, and many more.

Rainwater harvesting is the collection, conveyance, and storage of rainwater. Systems can be as simple as a rain barrel for garden irrigation at the end of a downspout, or as complex as a domestic potable system or a multiple end-use system at a large corporate campus. ParkUSA's RainTrooper is a solution for both commercial and residential applications to conserve as much rain as possible to store for future use, and reduce consumption of limited treated municipal water.

MODELS



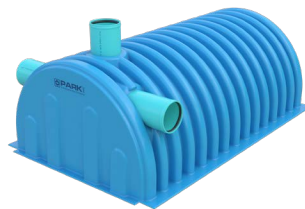
High Quality Precast Concrete



Steel



Plastics



The continuous population growth and the growing number of extreme droughts across the world have led to a great increase in consumption of potable and non-potable water. Conservation of rainwater is becoming critical in parts of the United States to meet the growing water demands.

FEATURES

- Precast Concrete, Fiberglass, and Steel Models Available
- Overflow Design Available
- Inlet, Outlet, and Vent Connections
- Easy Installation and Maintenance
- Portable Model Available
- Meets all Building Codes

MATERIAL TYPE	FEATURES	BENEFITS
High Quality Precast Concrete rainwater storage tanks for underground installation provide the largest selection of tank sizes and configurations. The tanks are especially developed for storing rainwater and are equipped with optional liners or coatings to provide the desired level of water quality for a particular application.	<ul style="list-style-type: none"> • Floating Suction Screen • Makeup Water • Inlet/ Outlet/ Vent Connections • Calmed inlet • Overflow siphon 	<ul style="list-style-type: none"> • The most economical of the material options • Suitable for all outdoor installations • Provide for heavy traffic durability
Steel Tanks are recommended for applications where the rainwater storage tanks are in a freestanding position, i.e., in a basement or on a slab above ground. The tanks can be constructed from carbon steel, stainless steel, or galvanized steel.	<ul style="list-style-type: none"> • Freeze Protection for cold environments • Makeup Water supply with Backflow Preventer • Inlet/Outlet/Vent Connections • Lifting lugs, gasketed access covers 	<ul style="list-style-type: none"> • Extremely strong and can be coated to prevent corrosion and ensure water quality. • Ideal for outside storage of rainwater in buildings that wish to display their water conservation efforts.
Plastics - Rainwater storage tanks constructed of HDPE (High Density Polyethylene) or Fiberglass are available for underground installation in every size from 300 to 20,000 gallons. Above ground tanks are free-standing and require a firm level base. Options include tie-downs and freeze protection.	<ul style="list-style-type: none"> • Floating Suction Screen • Makeup Water • Inlet/Outlet/Vent Connections • Calmed inlet • Overflow siphon 	<ul style="list-style-type: none"> • Suitable for residential or commercial applications • Light Weight • Easy to Install • Corrosive Resistant for use in chemical or heavy industrial areas.
Waterbags are available for basement, remote, or temporary storage of rainwater reuse. Manufactured of military grade materials, the water bag will provide years of service.	<ul style="list-style-type: none"> • Floating Suction Screen • Makeup Water • Inlet/Outlet/Vent Connections • Calmed inlet • Overflow siphon 	<ul style="list-style-type: none"> • Fast & Easy Setup • Collapsible tank design • Rounded corners to redistribute shell stress uniformly • Portable

SYSTEM COMPONENTS

Regardless of the complexity of the system, the rainwater harvesting system comprises the following basic components:

- **Catchment surface** – the collection surface from which rainfall runs off, typically a roof structure.
- **Gutters and downspouts** – The harvested rainwater is conveyed through the roof drains and piping to a single point of discharge.

- **Rainwater Filter** – At the point of discharge, the rainwater is transferred through a filter that removes large and fine debris. ParkUSA provides the following filters for this purpose:
 - Filter Collector (RTX-FILCA) – roofs up to 750 square feet
 - Compact Filter (RTX-COMFLT) – roofs up to 2100 square feet
 - Volume Filter (RTX-VF) – roofs up to 4500 square feet
 - Vortex Fine Filter (RTX-VFF) – roofs up to 2,000 square feet

OPERATION

Rainwater harvesting, in its essence, is the collection, conveyance, and storage of rainwater. Systems can be as simple as a rain barrel for garden irrigation at the end of a downspout, or as complex as a domestic potable system or a multiple end-use system at a large corporate campus.

Once a maximum level is reached in the tank, the innovative overflow siphon (RTX-OVRFLW), with its skimmer effect, removes particles lighter than water (e.g. flower pollen, oils, etc.) that float slowly to the water surface. Removing this floating layer of surface pollutants through regular overflow from the tank is important in order to maintain high water quality and allowance of oxygen diffusion at the water surface. The narrow slits in the overflow siphon prevent rodents from entering the tank.

The Floating Intake with Hose (RTX-FSCF) has an air-filled ball that suspends the floating inlet filter just below the water surface where the cleanest water resides. A high quality 1-inch diameter flexible hose allows for connection of the floating inlet to a pump or suction line. The filter is made out of lead-free brass with a 0.047-inch stainless steel screen and a built-in check valve.

The Calmed Inlet feature prevents disturbance and re-suspension of fine sediments that gather on the bottom of the tank. Another important function of the inlet is the

introduction of oxygen into the lower layers of the tank which maintains a fresh supply of water while preventing anaerobic conditions from forming.

If the catchment area is comprised of a variety of different surfaces, with different runoff coefficients, then a weighted average value should be calculated.

A = Drainage Area (square feet), the area that drains to the design point of interest

A conversion factor of 7.48 gallons of water per one cubic foot of area will be necessary to change the final result from cubic feet to gallons.

Determining Demand: There are two types of water demands:

Indoor demand includes the number of people in the building, the number of hours per day the building is occupied, the numbers and types of toilets/urinals in place, etc. Design considerations would be the same as the demand from a fresh water supply line. The additional concern would be the creation of required water pressures and any pretreatment from the rainwater storage tank. Call ParkUSA Engineering for design help from pre-assembled lift stations to pipe, valves and fittings.

AREA DESCRIPTION	RUNOFF COEFFICIENT C	CHARACTER OF SURFACE	RUNOFF COEFFICIENT C
BUSINESS		PAVEMENT	
DOWNTOWN	0.70-0.95	ASPHALT AND CONCRETE	0.70-0.95
NEIGHBORHOOD	0.50-0.70	BRICK	0.70-0.85
RESIDENTIAL		ROOFS	0.75-0.95
SINGLE-FAMILY	0.30-0.50	LAWNS, SANDY SOIL	
MULTI-UNITS, DETACHED	0.40-0.60	FLAT, 2 PERCENT	0.05-0.10
MULTI-UNITS, ATTACHED	0.60-0.75	AVERAGE, 2-7 PERCENT	0.10-0.15
RESIDENTIAL (SUBURBAN)	0.25-0.40	STEEP, 7 PERCENT	0.15-0.20
APARTMENT	0.50-0.70	LAWNS, HEAVY SOIL	
INDUSTRIAL		FLAT, 2 PERCENT	0.13-0.17
LIGHT	0.50-0.80	AVERAGE, 2-7 PERCENT	0.18-0.22
HEAVY	0.60-0.90	STEEP, 7 PERCENT	0.25-0.35
PARK, CEMETERIES	0.10-0.25		
PLAYGROUNDS	0.20-0.35		
RAILROAD YARD	0.20-0.35		
UNIMPROVED	0.10-0.30		

Outdoor demand consists of the volume of water to be used for irrigation of grasses and landscaping, water fountains, or other water features. Different types of vegetation have different water requirements. Research is required for the specific design features of the system in question.

See the example of sizing for demand below for additional information regarding this aspect.

Example of sizing: A warehouse facility in Houston, TX plans to use collected rainwater to irrigate the landscaping on the property site. The building is a rectangular structure, 150 feet x 50 feet, with a flat roof. The landscaping area consists of multiple flowerbeds and a large grassy region with a total combined area of 4,500 square feet. The runoff coefficient is determined to be 0.80. Annual precipitation from demographics of the region show 49.8 inches per year is received.

What is the optimum size for the rainwater storage tank?

To determine supply using the Rational Method equation:

$$Q = CIA$$

Runoff Coefficient (C) = 0.80

Rainfall Intensity (I) = 49.8 inches per year / 12 months = 4.15 inches/month

Roof area (A) = (150 x 50) = 7,500 square feet

Conversion factor - 7.48 gallons of water per one cubic foot of area.

To determine the average monthly supply in gallons/month, first convert the rainfall intensity from 4.15 inches per month to feet per month

- I = 4.15 in/mo. divided by 12 in/ft = 0.3458 ft/mo.
- Therefore, $Q = C \times I \times A$, now can be calculated:
- $Q = 0.80 \times 0.3458 \text{ ft/mo.} \times 7,500 \text{ square feet} \times 7.48 \text{ gal / cubic feet} = 15,520 \text{ gallons / mo.}$
- $Q = 15,520 \text{ gallons per month} - \text{monthly supply of rainwater}$

To determine the demand for the rainwater, calculate the amount of water planned to be used in a one month period. While the amount of water needed for lawn maintenance varies depending on current weather factors, the climate for the area, and the time of year, the general rule of thumb is for the lawn to receive 1 inch of water per week during dry conditions. Using the following conversion calculation: $1 \text{ in/wk} \div 12 \text{ in/ft} \times 7.48 \text{ gal/ft}^3 = 0.623 \text{ gal/ft}^2$

This demand equates to 0.623 gallons per square foot of lawn area each week. Therefore,

- Determine the average monthly demand in gallons/month:
- Landscaping area = 4,500 square feet
- Irrigation Rate = 0.623 gal/ft² per week x 4,500 ft² = 2,803 gallons/week
- 2,803 gal/wk x 4.2 weeks per mo. = 11,773 gal/mo.
- The average monthly demand for rainwater is approximately 11,775 gallons.

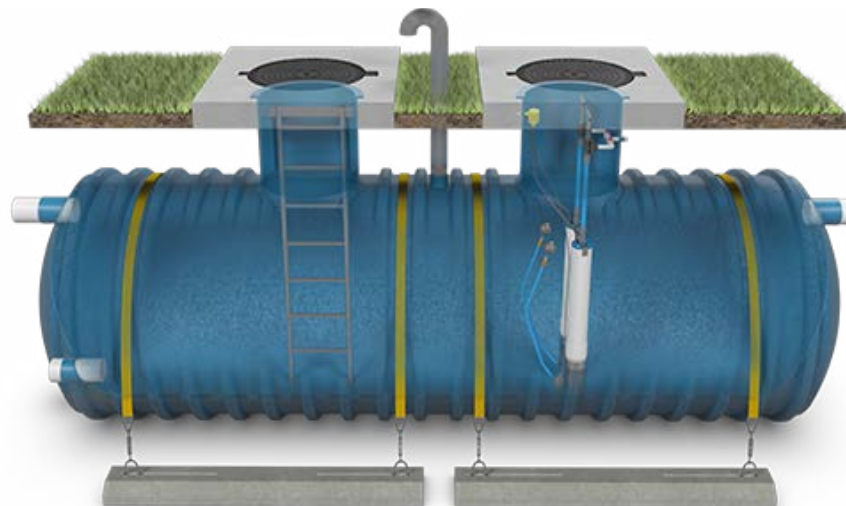
The supply of rainwater available each month exceeds the demand planned for its use.

Sizing a 16,000 gallon RainTrooper for this application would create a reserve of approximately 4,000 gallons per month.

MAINTENANCE

ParkUSA's RainTrooper Systems are designed to be easily operated and maintained. Regular and on-going inspection of the system should be conducted, which includes visually inspecting all system components and cleaning of catchment area, gutters, and filters as needed. Pumping the first-flush system should be done quarterly initially, and then adjusted to a maintenance schedule based on site characteristics and environment. A pump truck may be utilized to remove grit and trash from the storage tank. Maintenance of the pump is done as required by pump manufacturer requirements. Typical pump maintenance includes cleaning of debris on the suction screens of the pump.

Stormwater
Quality



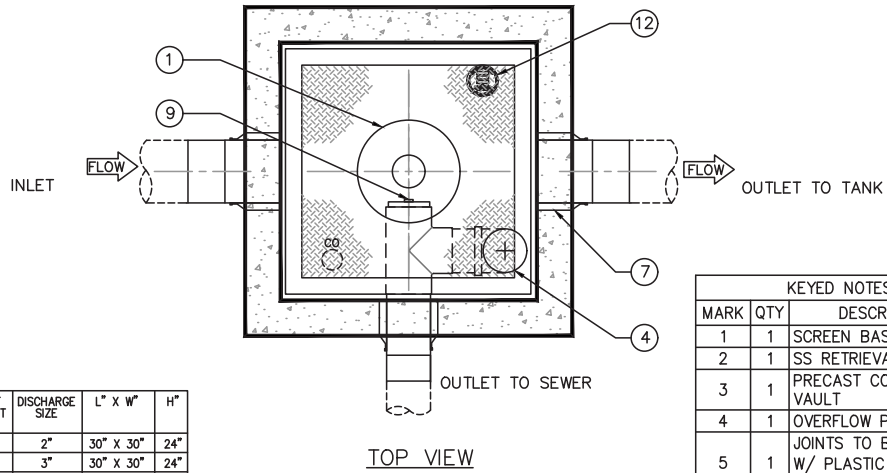
APPLICATIONS:
TYPICAL APPLICATIONS FOR
THE MODEL BFC
INCLUDE:

- RAIN HARVESTING
- FIRE PROTECTION
- EVAPORATIVE COOLING
TOWER MAKE-UP
- PROCESS WATER
- NON-POTABLE WATER
- SITE IRRIGATION

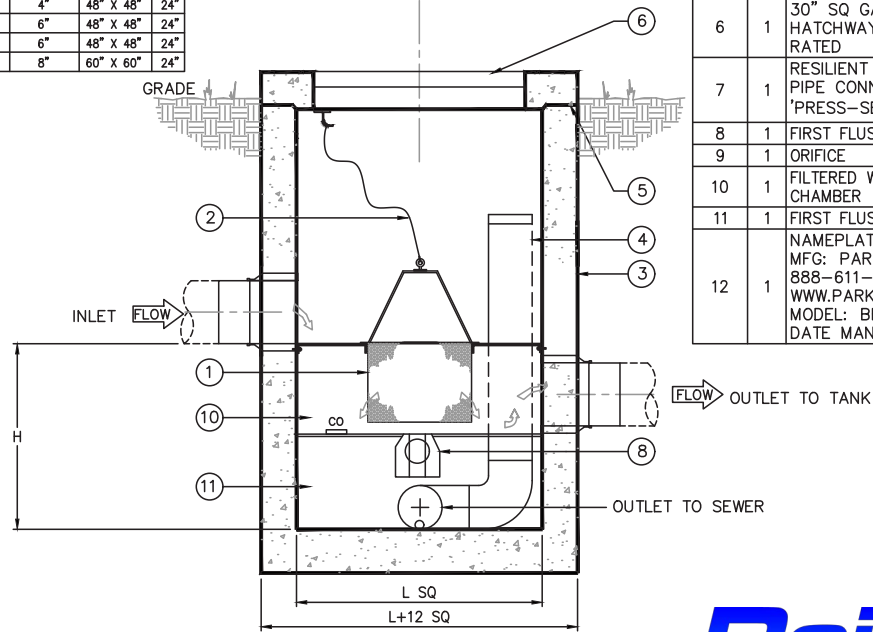
FEATURES:

- SELF-CLEANING FILTER
- 3" THRU 15" CONNECTIONS
- MAX 50,000 SQ/FT

MODEL	NOMINAL FLOW (GPM)	FIRST FLUSH (GAL)	INLET OUTLET SIZE	DISCHARGE SIZE	L" X W"	H"
BFC-03	50	16	3"	2"	30" X 30"	24"
BFC-04	100	16	4"	3"	30" X 30"	24"
BFC-06	300	30	6"	4"	36" X 36"	24"
BFC-08	650	67	8"	4"	48" X 48"	24"
BFC-10	1200	67	10"	6"	48" X 48"	24"
BFC-12	1900	67	12"	6"	48" X 48"	24"
BFC-15	3400	120	15"	8"	60" X 60"	24"



TOP VIEW



ELEVATION

KEYED NOTES		
MARK	QTY	DESCRIPTION
1	1	SCREEN BASKET
2	1	SS RETRIEVAL CHAIN
3	1	PRECAST CONCRETE VAULT
4	1	OVERFLOW PORT
5	1	JOINTS TO BE SEALED W/ PLASTIC RAM-NEK GASKET
6	1	30" SQ GALV HATCHWAY H-20 RATED
7	1	RESILIENT RUBBER PIPE CONNECTION 'PRESS-SEAL' (TYP.)
8	1	FIRST FLUSH VALVE
9	1	ORIFICE
10	1	FILTERED WATER CHAMBER
11	1	FIRST FLUSH CHAMBER
12	1	NAMEPLATE MFG: PARKUSA 888-611-PARK WWW.PARKUSA.COM MODEL: BFC-1 DATE MANUFACTURED



SPECIFICATIONS


- CONCRETE :** CLASS I/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.
- REINFORCEMENT:** GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 AND ASTM-C478 ON REQUIRED CENTERS OR EQUAL.
- COVER & FRAME :** ALL STEEL FABRICATION SHALL BE IN ACCORDANCE TO AWA D1.1. STEEL SHALL BE ASTM A36 CARBON STEEL, AND HOT-DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE TO ASTM A123.

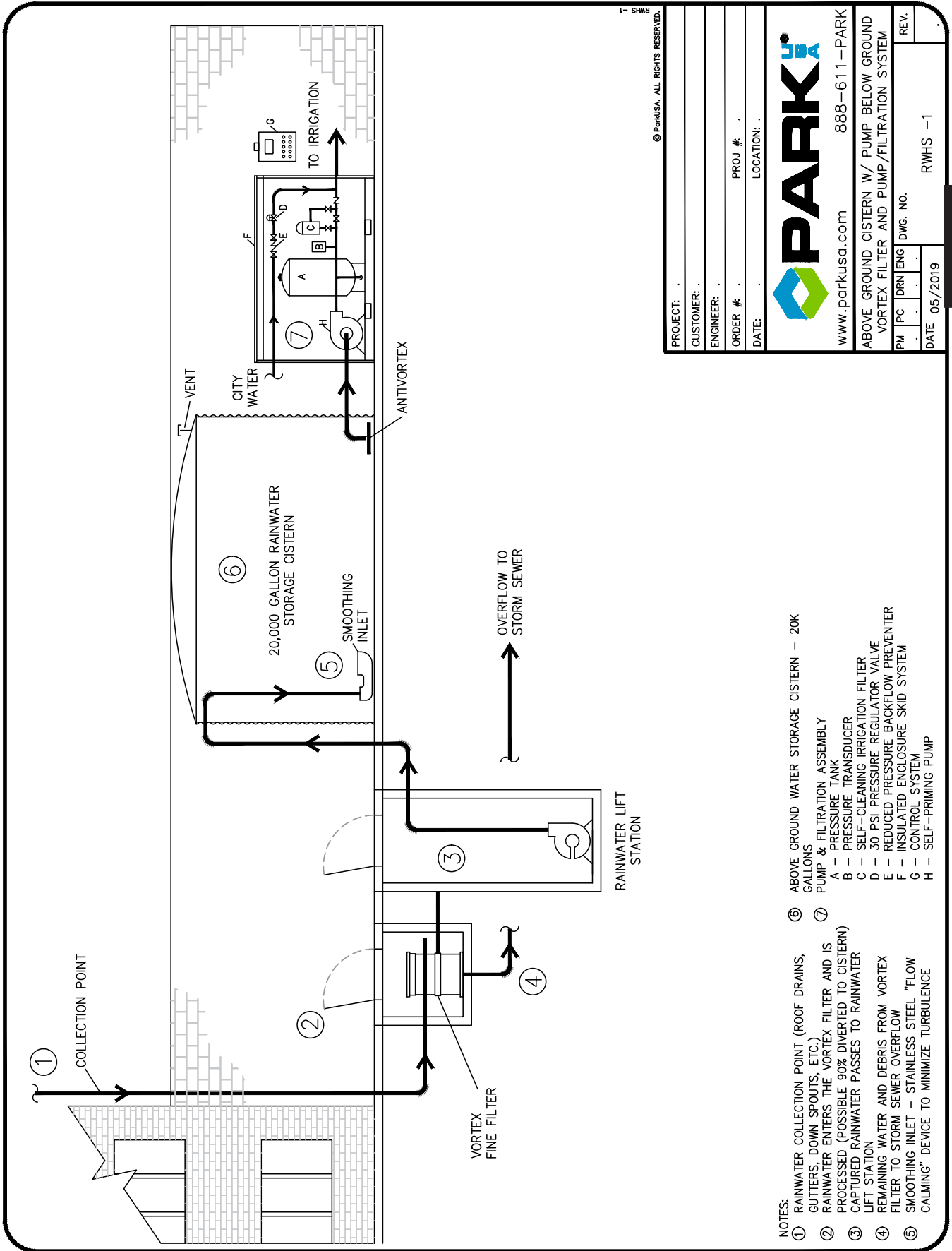
ENGINEERING DATA

INDUSTRIAL DUTY, HIGH EFFICIENCY, SELF-CLEANING, BELOW GROUND FILTRATION SYSTEM. THIS MODEL SHIPS WITH A CAST IRON LID FOR VEHICLE LOADING APPLICATIONS.



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PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: .	LOCATION: .
	
www.parkusa.com 888-611-PARK	
BASKET FILTER MODEL BFC	
PM .	PC .
DRN .	ENG .
DATE 05/2019	DWG. NO. BFC-1
REV. .	



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PROJECT:	
CUSTOMER:	
ENGINEER:	
ORDER #:	PROJ #:
DATE:	LOCATION:

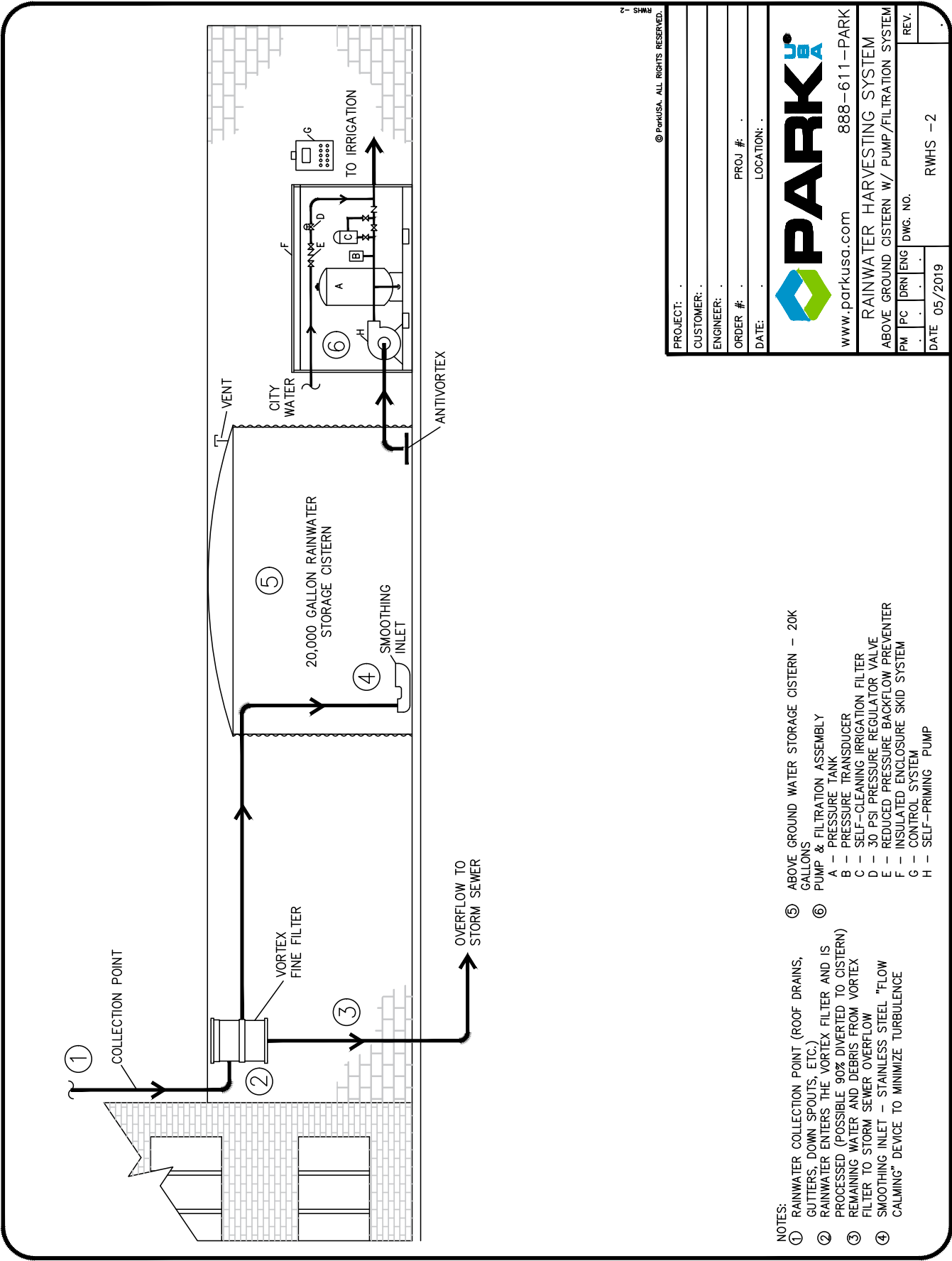
PARK
www.parkusa.com 888-611-PARK

ABOVE GROUND CISTERN W/ PUMP BELOW GROUND VORTEX FILTER AND PUMP/FILTRATION SYSTEM

PM	PC	DRN	JENG	DWG. NO.	REV.
DATE	05/2019				RWHS -1

- NOTES:
- ① RAINWATER COLLECTION POINT (ROOF DRAINS, GUTTERS, DOWN SPOUTS, ETC.)
 - ② RAINWATER ENTERS THE VORTEX FILTER AND IS PROCESSED (POSSIBLE 90% DIVERTED TO CISTERN)
 - ③ CAPTURED RAINWATER PASSES TO RAINWATER LIFT STATION
 - ④ REMAINING WATER AND DEBRIS FROM VORTEX FILTER TO STORM SEWER OVERFLOW
 - ⑤ SMOOTHING INLET - STAINLESS STEEL "FLOW CALMING" DEVICE TO MINIMIZE TURBULENCE
 - ⑥ ABOVE GROUND WATER STORAGE CISTERN - 20K GALLONS
 - ⑦ PUMP & FILTRATION ASSEMBLY
 - A - PRESSURE TANK
 - B - PRESSURE TRANSDUCER
 - C - SELF-CLEANING IRRIGATION FILTER
 - D - 30 PSI PRESSURE REGULATOR VALVE
 - E - REDUCED PRESSURE BACKFLOW PREVENTER
 - F - INSULATED ENCLOSURE SKID SYSTEM
 - G - CONTROL SYSTEM
 - H - SELF-PRIMING PUMP

**Stormwater
Quality**



- NOTES:
- ① RAINWATER COLLECTION POINT (ROOF DRAINS, GUTTERS, DOWN SPOUTS, ETC.)
 - ② RAINWATER ENTERS THE VORTEX FILTER AND IS PROCESSED (POSSIBLE 90% DIVERTED TO CISTERN)
 - ③ REMAINING WATER AND DEBRIS FROM VORTEX FILTER TO STORM SEWER OVERFLOW
 - ④ SMOOTHING INLET - STAINLESS STEEL "FLOW CALMING" DEVICE TO MINIMIZE TURBULENCE
 - ⑤ ABOVE GROUND WATER STORAGE CISTERN - 20K GALLONS
 - ⑥ PUMP & FILTRATION ASSEMBLY
 - A - PRESSURE TANK
 - B - PRESSURE TRANSDUCER
 - C - SELF-CLEANING IRRIGATION FILTER
 - D - 30 PSI PRESSURE REGULATOR VALVE
 - E - REDUCED PRESSURE BACKFLOW PREVENTER
 - F - INSULATED ENCLOSURE SKID SYSTEM
 - G - CONTROL SYSTEM
 - H - SELF-PRIMING PUMP

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PROJECT:

CUSTOMER:

ENGINEER:

ORDER #

DATE:

PROJ #

LOCATION:

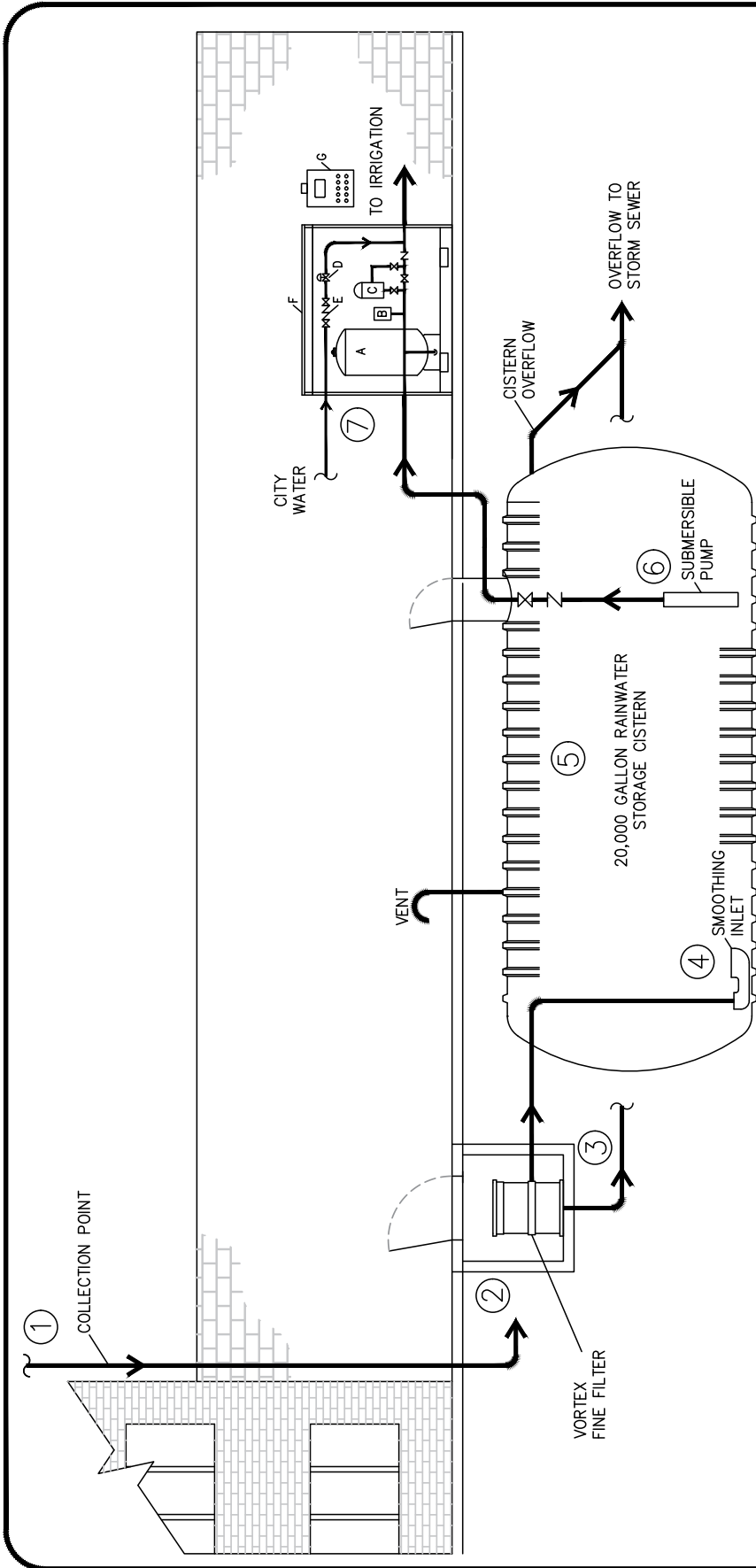
PARK
www.parkusa.com 888-611-PARK

RAINWATER HARVESTING SYSTEM

ABOVE GROUND CISTERN W/ PUMP/FILTRATION SYSTEM

PM	PC	DRN	ENG	DWG. NO.	REV.

DATE 05/2019 RWH5 -2

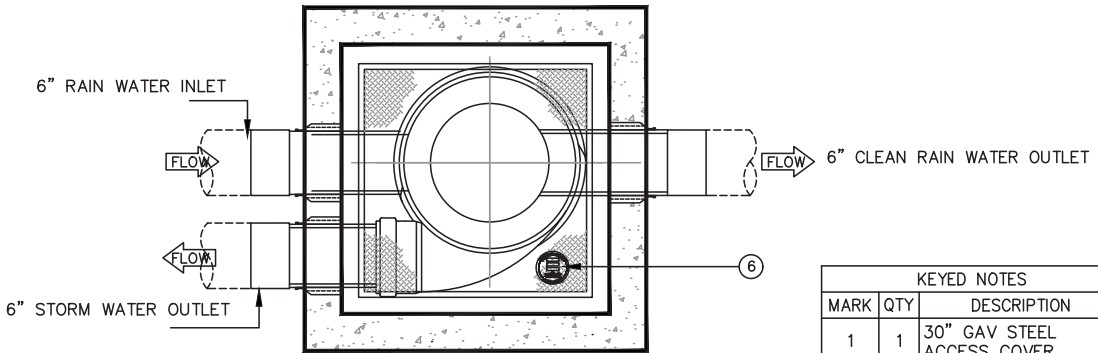


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PROJECT:	
CUSTOMER:	
ENGINEER:	
ORDER #:	PROJ. #:
DATE:	LOCATION:
PARK	
www.parkusa.com 888-611-PARK	
RAINWATER HARVESTING SYSTEM	
BELOW GROUND CISTERN W/ PUMP/FILTRATION SYSTEM	
PM	DRN
PC	ENG
DATE 05/2019	
RWHS -3	

- NOTES:
- ① RAINWATER COLLECTION POINT (ROOF DRAINS, GUTTERS, DOWN SPOUTS, ETC.)
 - ② RAINWATER ENTERS THE VORTEX FILTER AND IS PROCESSED (POSSIBLE 90% DIVERTED TO CISTERN REMAINING WATER AND DEBRIS FROM VORTEX FILTER TO OVERFLOW)
 - ③ SMOOTHING INLET - STAINLESS STEEL "FLOW CALMING" DEVICE TO MINIMIZE TURBULENCE BELOW GROUND WATER STORAGE CISTERN - 20K GALLONS
 - ④ SMOOTHING INLET
 - ⑤ 20,000 GALLON RAINWATER STORAGE CISTERN
 - ⑥ SUBMERSIBLE MULTISTAGE PUMP
 - ⑦ FILTRATION ASSEMBLY
 - A - PRESSURE TANK
 - B - PRESSURE TRANSDUCER
 - C - SELF-CLEANING IRRIGATION FILTER
 - D - 30 PSI PRESSURE REGULATOR VALVE
 - E - REDUCED PRESSURE BACKFLOW PREVENTER
 - F - INSULATED ENCLOSURE SKID SYSTEM
 - G - CONTROL SYSTEM

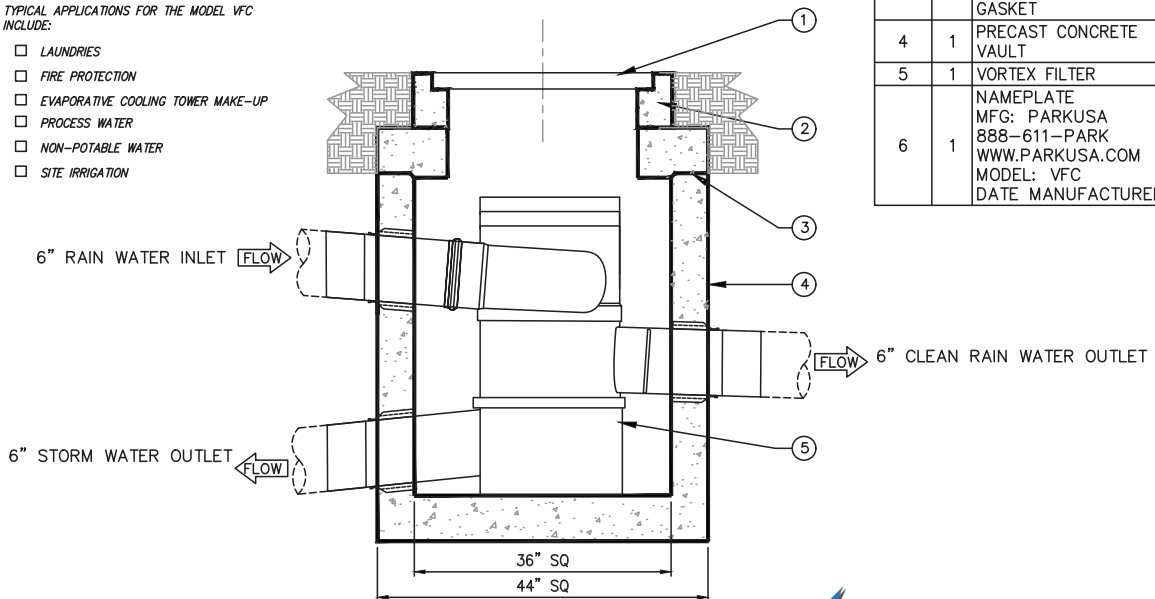
**Stormwater
Quality**



TOP VIEW

APPLICATIONS:
TYPICAL APPLICATIONS FOR THE MODEL VFC INCLUDE:

- LAUNDRIES
- FIRE PROTECTION
- EVAPORATIVE COOLING TOWER MAKE-UP
- PROCESS WATER
- NON-POTABLE WATER
- SITE IRRIGATION



ELEVATION

KEYED NOTES		
MARK	QTY	DESCRIPTION
1	1	30" GAV STEEL ACCESS COVER
2	1	3" RISER EXTENSION
3	1	JOINTS TO BE SEALED W/ PLASTIC RAM-NEK GASKET
4	1	PRECAST CONCRETE VAULT
5	1	VORTEX FILTER
6	1	NAMEPLATE MFG: PARKUSA 888-611-PARK WWW.PARKUSA.COM MODEL: VFC DATE MANUFACTURED




PLEASE CALL FOR ADDITIONAL SIZES & DIMENSIONS.

SPECIFICATIONS

- CONCRETE : CLASS 1 CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.
- REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 AND ASTM-C478 ON REQUIRED CENTERS OR EQUAL.
- COVER & FRAME : ALL STEEL FABRICATION SHALL BE IN ACCORDANCE TO AWA D1.1. STEEL SHALL BE ASTM A36 CARBON STEEL, AND HOT-DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE TO ASTM A123.

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PROJECT: .	
CUSTOMER: .	
ENGINEER: .	
ORDER #: .	PROJ #: .
DATE: .	LOCATION: .
 PARK USA	
www.parkusa.com 888-611-PARK	
VORTEX FILTER IN PRECAST CONCRETE VAULT	
PM .	PC .
DRN .	ENG .
DATE 05/2019	DWG. NO. VFC-1
REV.	

MARK QTY	DESCRIPTION	KEYED NOTES
1	1" SUBMERSIBLE PUMP	
2	2" FLEX HOSE	
3	2" PILESS ADAPTER W/ T-HANDLE	
4	2" PLUG VALVE	
5	2" BALL CHECK	
6	3" GALV. STEEL DISCHARGE PIPE	
7	2" PVC PUMP TUBE	
8	1" PVC UNION	
9	1" PVC TEE	
10	1" SCH 80 PVC 90° ELBOW	
11	1" BRZ BACKFLOW PREVENTER	
12	1" 72" DIA x 18"-6" DEEP PRECAST CONCRETE LIFT STATION	
13	1" 4" GALV VENT	
14	1" 36" X 48" SINGLE LEAF ALUMINUM HATCHWAY	
15	1" SS CABLE BRACKET	
16	1" SS CABLE BRACKET	
17	1" SLENOID VALVE "MUV-1"	
18	2" CONTROL FLOATS	
19	1" SYSTEM CONTROL PANEL	
20	1" REBAR AS REQUIRED	
21	1" ALL JOINTS MADE WATER-TIGHT W/ PLASTIC REPAIR KIT	
22	1" 1" ENCLASURE	
23	1" 1" PVC CONDUIT	
24	1" 2" SCH 80 BALL VALVE	
25	1" 1" PRESSURE TRANSDUCER (PS-1)	
26	1" 1" PRESSURE GAUGE	
27	1" 1" SCH 80 PVC TEE	
28	1" 1" SCH 80 PVC TEE	
29	1" 1" SELF CLEANING IRRIGATION FILTER	
30	1" 3" PVC SLEEVE FOR MAKE-UP WATER SUPPLY W/ SS BRACKET	
31	1" CONCRETE PAD	
32	1" NAMEPLATE INDICATING MAKE-UP WATER SUPPLY	
33	1" NAMEPLATE INDICATING IRRIGATION FILTER CONTROL PANEL	
34	1" SLOTTED TUBE SCREEN (50sq OPEN AREA) W/ 1" FLUSH VALVE	
35	1" 1" PVC UNION	
36	1" 2" TRU UNION BALL VALVE	
37	1" 2" PVC ELBOW	
38	1" 1" UNION BOX	
39	1" 1" PRESSURE DIFFERENTIAL SWITCH	

SPECIFICATIONS

CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONCRETE WITH SECTIONAL RISER TO REQUIRED DEPTH. REINFORCEMENT WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

ALUMINUM HATCH: 300 PSI RATED 1/4" ALUMINUM SOD-RESISTANT FLOOR WITH 1/2" ALUMINUM BOLTS AND NUTS & SLIDLOCK (H-20 BATING OPTIONAL). PUMPS SHALL BE MULTI-STAGE TYPE WITH SENSIBLE TYPE MOTOR. PUMPS SHALL HAVE A CAPACITY AS FOLLOWS:

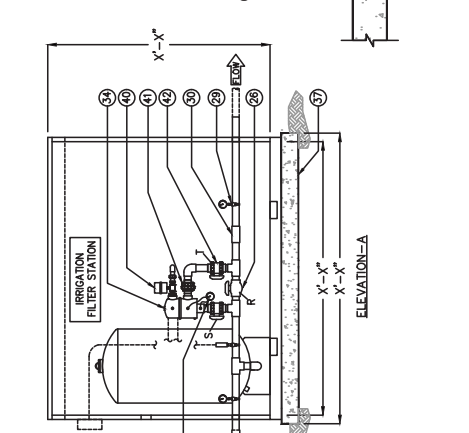
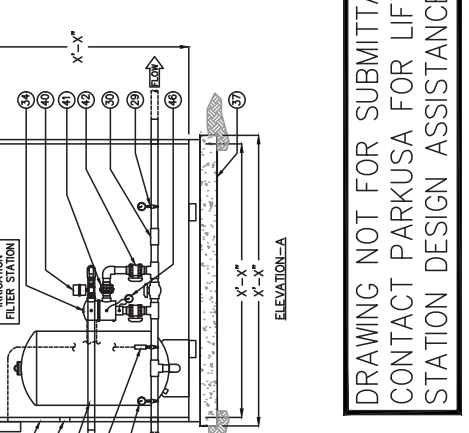
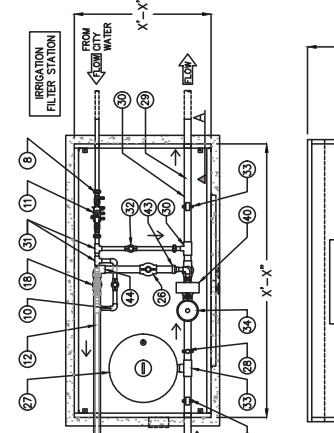
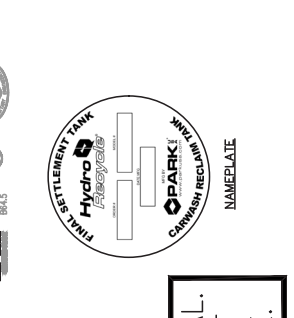
PUMP	ELECTRICAL			
	HP	PSI	RRM	PH
IP-1	X	X	X	X
IP-2	X	X	X	X

CONTROLS:

PUMP CONTROLS SHALL BE MOUNTED INSIDE A UL LISTED NEMA-4X ENCLOSURE AND INCLUDE CIRCUIT BREAKERS, ALARM CIRCUIT FUSE, EC RATED MOTOR STARTER, PUMP VISUAL ALARM BEACON. PANEL IS DESIGNED FOR REMOTE MOUNTING.

ENGINEERING DATA:

ELEVATION AND PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF ASSEMBLY. USE DIMENSIONAL DATA AS SHOWN. ALL PIPE, VALVES AND FITTINGS OF THE ASSEMBLY ARE APPROVED BY ONE OF THE FOLLOWING ASSOCIATIONS:



DRAWING NOT FOR SUBMITTAL. CONTACT PARKUSA FOR LIFT STATION DESIGN ASSISTANCE.

PROJECT:
 CUSTOMER:
 ENGINEER:
 ORDER # :
 DATE:

PROJ. # :
 LOCATION:

PARK
 www.parkusa.com 888-611-PARK
 IRRIGATION SYSTEM
 MODEL IR-SYS

PM PC DRN ENG DWG. NO. IR-SYS
 DATE 05/2019 REV.

Stormwater Quality



Features

- Precast concrete, fiberglass, and steel models available
- Overflow design available
- Inlet, outlet, and vent connections
- Easy installation and maintenance
- Portable models available
- Meets all building codes

Rainwater Harvesting

The continuous population growth and the growing number of extreme droughts across the world have led to a great increase in consumption of potable and non-potable water. Conservation of rainwater is becoming critical in parts of the United States to meet the growing water demands. Living in a country where water has always been readily available, most people do not realize that rainwater can be used for nearly all non-potable applications, including irrigation, toilet flushing, bathroom sinks, mechanical systems, washing machines, car washing, custodial uses, and many more.

Rainwater harvesting is the collection, conveyance, and storage of rainwater. Systems can be as simple as a rain barrel for garden irrigation at the end of a downspout, or as complex as a domestic potable system or a multiple end-use system at a large corporate campus. ParkUSA's RainTrooper® is a solution for both commercial and residential applications to conserve as much rain as possible to store for future use, and to reduce consumption of the limited treated municipal water.



#BUILDING AMERICA!

RW | RAINTROOPER
Standard



Model BPT



Model RH



Model RHF

System Components

The RainTrooper® is designed with the following components:

- Catchment devices
- Debris filtration
- Flush diverters
- Water storage tanks
- Pump systems
- Water disinfection systems

How it works

Rainwater harvesting, in its essence, is the collection, conveyance, and storage of rainwater. Once a maximum level is reached in the tank, the innovative overflow siphon (RTX-OVRFLW), with its skimmer effect, removes particles lighter than water (e.g. flower pollen, oils, etc.) that float slowly to the water surface. Removing this floating layer of surface pollutants through regular overflow from the tank is important to maintain high water quality and allow oxygen diffusion at the water surface. The narrow slits in the overflow siphon prevent rodents from entering the tank.

The floating intake with hose (RTX-FSCF) has an air-filled ball that suspends the floating inlet filter just below the water surface where the cleanest water resides. A high quality one inch diameter flexible hose allows for connection of the floating inlet to a pump or suction line. The filter is made of lead-free brass with a 0.047" stainless steel screen and a built-in check valve.

The calmed inlet feature prevents disturbance and re-suspension of fine sediments that gather on the bottom of the tank. Another important function of the inlet is the introduction of oxygen into the lower layers of the tank, which maintains a fresh supply of water while preventing anaerobic conditions from forming.

Visit raintrooper.parkusa.com for more information and design assistance.

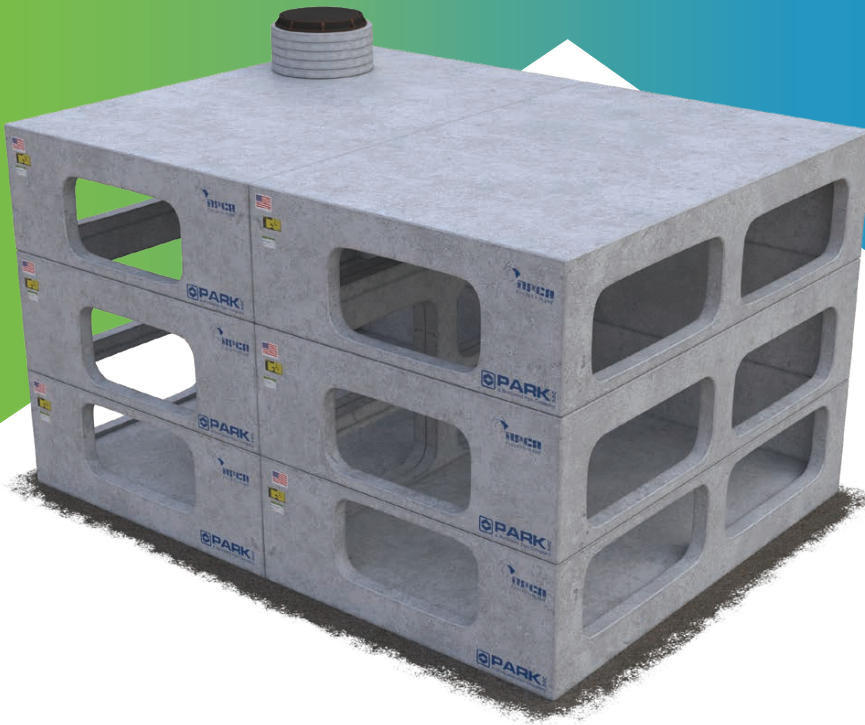
To request a quote or catalog, visit request.parkusa.com.

APPLICATIONS



Features

- Easy installation
- High capacity level
- Component construction
- Standard and custom sizes available
- LEED compliant
- Long-term sustainability



Underground Detention System

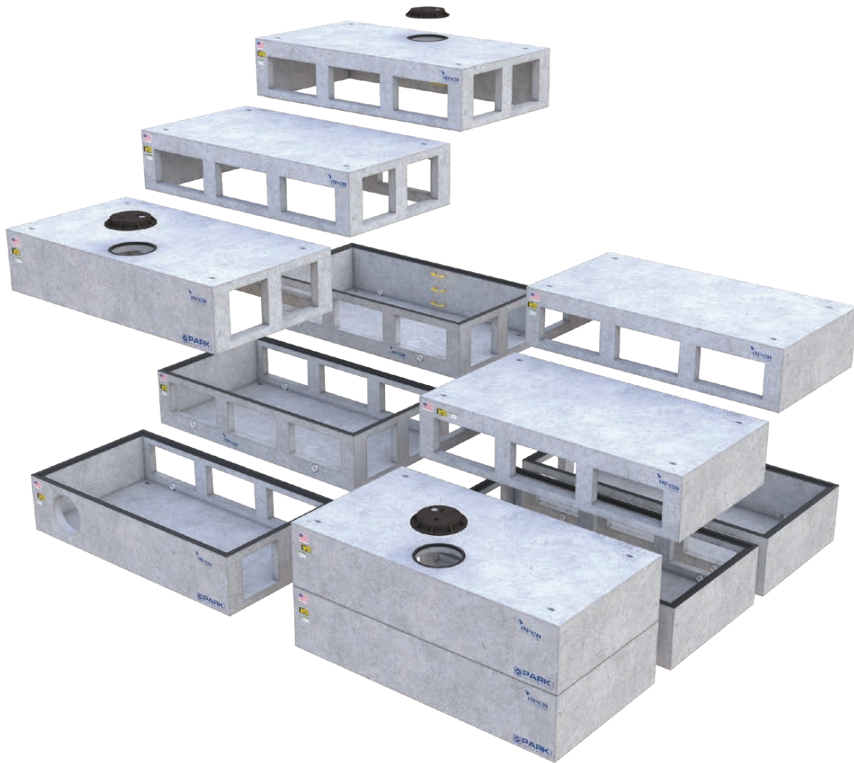
The ParkUSA RainBasin® is a stormwater detention system designed to mitigate the effects of New Development and Redevelopment on an existing drainage system. In addition, the system can be used for the management of storable and reusable stormwater runoff through ground water recharge or rain harvesting.

Stormwater storage presents a valuable resource for sustainability and overall project goals. One of the common issues is the need of site-specific applications where stormwater needs to be detained and allowed to discharge at a slower controlled rate often mimicking pre-development conditions.

The RainBasin is a system that affords the designer the opportunity to maximize the developed land by placing the detention easily underground such as parking lots and roadways with minimal cover.



RW | RAINBASIN
Standard



Sizing and Design Considerations

When designing a RainBasin system, the surface area and rainfall intensity is used to calculate the overall volume needed to be stored. The number of modules will depend on the storage volume needed. The individual vaults have standard dimensions and come in varying sizes.

Sizing Calculation

To calculate the total detention volume for an area between one acre and 10 acres of existing impervious cover following the methodology specified in the City of Houston Design Manual, the appropriate equation is:

$$V_t = [43,560 * (0.50 * A_{ii})] + (1815 * A_{ei})$$

V_t = Total detention volume in Cubic Ft

A_{ii} = Area of Impervious cover (acres)

A_{ei} = Area of existing Impervious cover (acres) for which detention is not currently provided

Visit rainbasin.parkusa.com for more information and design assistance.

How it Works

The RainBasin system consists of a series of interconnected vaults. Stormwater runoff can enter the system through multiple options such as inlets, outlet openings, curbs, grates and downspouts. The accumulated stormwater will be stored within the system with a residence time varying with application and volume.

System Benefits

- Onsite stormwater management
- Stormwater runoff emulates natural conditions
- Mitigation of downstream flooding
- Modular structure for design considerations
- Rainwater harvesting option

Maintenance

The RainBasin system is designed for easy maintenance and longevity. The access modules can be arranged for convenience. The interior of the vault is open. Inspection should be performed at least once a year. During which a complete quality control documentation must be prepared. Confined space certification is required for maintenance.

To request a quote or catalog, visit request.parkusa.com.

APPLICATIONS



Good to use
in BMPs



Commercial



Low Impact
Development



Residential



Industrial



Municipal

Features

- Overlapping rib connection
- Unique in-line internal manifold
- High infiltrative capability
- Lightweight
- Variety of sizes
- Chemically resistant



Stormwater Storage

Stormwater storage presents a valuable resource for sustainability and overall project goals. One of the common issues is the need of site-specific applications where stormwater needs to be detained and allowed to discharge at a slower controlled rate, mimicking pre-development conditions.

In built-up areas, buildings and paved surfaces inhibit the natural infiltration of stormwater into the ground. With expanding urbanization, existing infrastructure is unable to accommodate the increased peak flows and runoff volumes which lead to ponding and flooding problems. Conventional stormwater management systems such as ponds, swales, pipe and concrete structures capture water but are labor intensive, expensive to maintain and occupy valuable land. CULTEC Stormwater Chambers provide a cost-effective solution for underground detention and infiltration.



SW | **STORMWATER CHAMBERS**
Standard



Applications

- Retention system
- Store larger volumes in a lower profile than comparably sized pipe
- Ability to recharge water on-site

Models

Contactor® Series

Lower profile chambers sizes range from 8.5 - 12.5 inches (216 - 318 mm) in height. Available models are the Contactor® Field Drain C-4HD and Contactor® 100HD.

Recharger® Series

Higher profile, larger capacity chambers sizes range from 18.5 - 48 inches (470 - 1219 mm) in height. Chamber capacities vary from 2.65 - 17.31 ft³/ft (0.246 - 1.64 m³/m). Available models within this series are the Recharger® 150XLHD, 180HD, 280HD, 330XLHD and 902HD.

Optional Components

- StormTrooper®
- TrashTrooper®

How it Works

ParkUSA® offers CULTEC Contactor® and Recharger® plastic stormwater chambers which are dome shaped, open bottomed corrugated plastic structures. They function like conventional stormwater ponds and work in conjunction with existing storm sewer infrastructure to provide underground retention/detention and infiltration of rainwater into the ground. With a wide range of sizes and models available, their advanced design and ease of installation makes them an ideal alternative to above-ground ponds, swales, crate or concrete structures or pipe installations. Water enters via a catch basin or other collective device followed by a pretreatment device (such as ParkUSA StormTrooper®) to be treated. Once treated, the water is piped towards the bed of chambers and distributed throughout the chamber network via the internal manifold and surrounding stone embedment. Depending on the system application, the water infiltrates into the ground, or it is detained and released.

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To request a quote or catalog, visit request.parkusa.com.

APPLICATIONS





RAINFILTER™
Multi-Basket Filtration System



PARK USA
A Northwest Pipe Company

**ENGINEERING
FACTS**

GENERAL INFORMATION

ParkUSA RainFilter is a complete system designed to treat total suspended solids (TSS), debris, and trash from stormwater runoff. It presents a low footprint and is of special use on LEED projects, and green developments, among others. It consists of an HDPE construction tank, an internal stainless-steel filter, and an optimal storage system.

In forested areas, the water balance or natural hydrology is altered only by rainfall and associated fluctuations in infiltration, evaporation and transpiration from plant growth. But in urban areas this natural hydrology is heavily modified, because land has been cleared of vegetation and capped with 'hard' or impervious surfaces. When it rains, most rainfall runs off impervious surfaces such as roofs and roads and is typically transported directly and quickly to waterways through a drainage system. As a result, stormwater reaches waterways more often, more quickly and in greater volumes than waterways are naturally adapted to as there are limited opportunities for infiltration, evaporation and transpiration via plants in the landscape.

In this way, the ParkUSA RainFilter is useful for any project where prefiltration is needed, plus it contributes to flow control in waterways.

SYSTEM COMPONENTS

The RainFilter is designed with the following components:

- Stainless-steel Basket Screen
- HDPE Tank
- Stormwater Storage Equipment as Required
- Piping

OPERATION

ParkUSA's RainFilter captures unwanted floatable pollutants from stormwater systems. Inside of the unit the influent will encounter a floatable collection stainless-steel basket that traps floating debris as small as 2000 micron in size, preventing them from invading municipal drainages. The separated effluent will exit the RainFilter and continue through the optional stormwater storage system, leaving behind the debris in the product.

DESIGN CONSIDERATIONS

Basin is constructed of high density polyethylene drainage pipe conforming to ASTM F1648. All extruded welding shall be per ASTM F2880. At the same time, the basket and tabs are to be constructed of 16 gauge stainless steel 304 perforated plate. The basket lip is to be constructed of 14 gauge 304 plate.

Lower overflow orifice to be constructed of stainless steel perforated cylinder. Finally, manhole frames, covers or grates area manufactured of grey cast iron conforming to ASTM A48 Class 30. Manhole shall have 24 inches inside diameter and traffic duty.

ParkUSA RainFilter is a complete system designed to treat TSS, debris, and trash from stormwater runoff. It presents a low footprint and is of special use on LEED projects, and green developments, among others.

FEATURES

- Various Basket and Storage Equipment Designs Available
- Low Profile Design Installation
- LEED Compliant
- Texas Manufactured
- Easy Installation and Maintenance

MAINTENANCE

BMPs are typically designed to completely drain within 24 to 48 hours after the completion of a storm event. These BMPs are designed to mimic natural conditions by allowing water to soak into the ground and limit the release of stormwater to other pipes or bodies of water. Monthly maintenance is advised in heavy weather months or after any major storm event (using 1 inch in 24 hours as a minimum guideline depending on non-structural controls of the site).

The frequency of cleaning any given installation will vary depending on its use. The Rainfilter should be cleaned routinely to prevent contamination of the effluent water. Collected debris should be removed before accumulations effectively reduce storage capacity as well as effluent flow rate out of the interceptor. A professional company familiar with regulations regarding proper disposal should maintain the interceptor.

Stormwater Storage Grates Dimensions

TANK UNITS	SIZE IN FEET	SIZE IN INCHES	SIZE IN MILLIMETERS
ER - 501 SINGLE	1.48' X 1.34' X 2.25'	17.72" X 16.06" X 26.97"	450MM X 408MM X 685 MM
ER - 502 DOUBLE	2.89' X 1.34' X 2.25'	34.65" X 16.06" X 26.97"	880MM X 408MM X 685 MM
ER - 503 TRIPLE	4.30' X 1.34' X 2.25'	51.75" X 16.06" X 26.97"	1,310MM X 408MM X 685 MM
ER - 504 QUAD	5.71' X 1.34' X 2.25'	68.50" X 16.06" X 26.97"	1,740MM X 408MM X 685 MM
ER - 505 PENT	7.12' X 1.34' X 2.25'	85.40" X 16.06" X 26.97"	2,170MM X 408MM X 685 MM

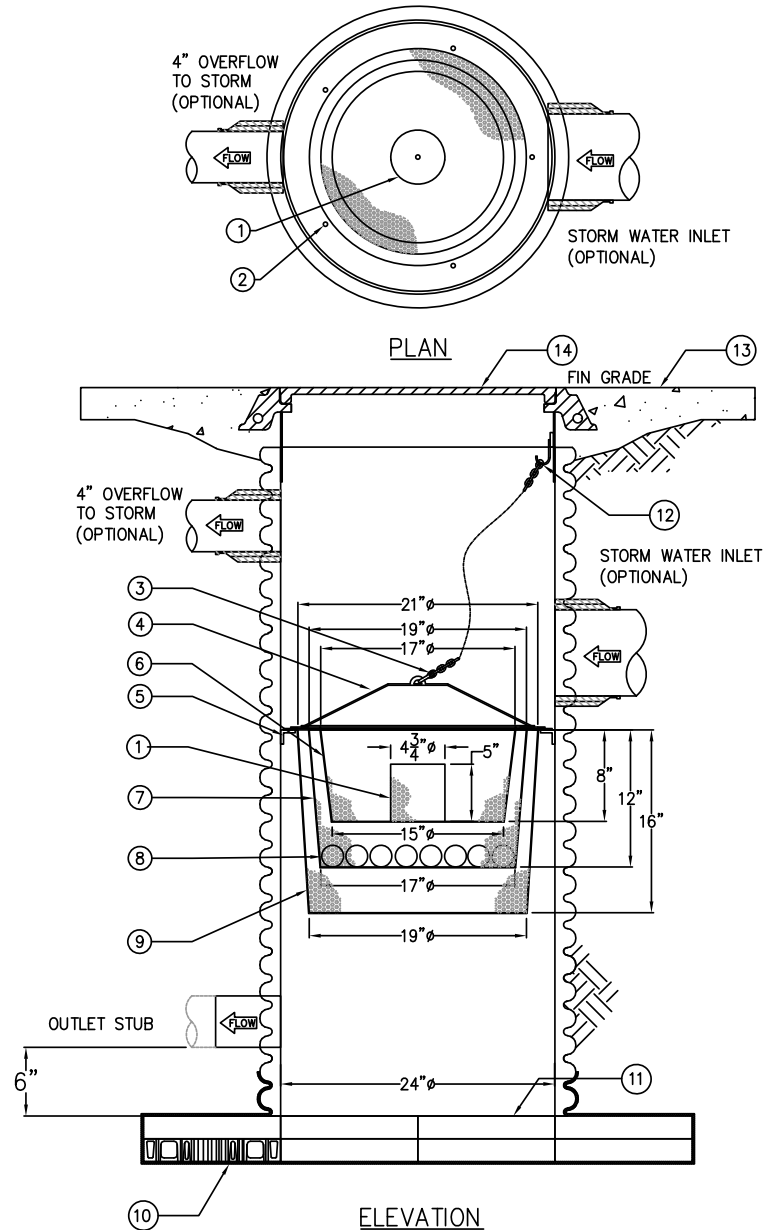
TANK UNITS	TANK VOLUME CUBIC FEET	TANK VOLUME GALLONS	97 PERCENT WATER STORAGE COLUMN CUBIC FEET	97 PERCENT WATER STORAGE VOLUME GALLONS
ER - 501 SINGLE	4.4	33.22	4.31	32.21
ER - 502 DOUBLE	8.68	64.97	8.43	63.05
ER - 503 TRIPLE	12.93	96.72	12.54	93.81
ER - 504 QUAD	17.17	128.47	16.65	124.58
ER - 505 PENT	21.42	160.21	20.78	155.41

SIZING

Selecting the appropriate Rainfilter unit depends on three parts; HDPE basin configuration, stainless steel basket dimensions, and if the application needs storage for stormwater.

For the HDPE basin, the standard is 19 inches inside diameter (slightly customizable), height varies with application. The SS basket depends on the basin ID, usually presents a 16-inch height and four concentric merged baskets. And finally, for the stormwater storage grate, the sizes may vary for application as shown in the chart below.

Stormwater
Quality



KEYED NOTES		
MARK	QTY	DESCRIPTION
1	1	SS BASKET OVERFLOW
2	1	3/8" Ø HOLES TO ALLOW INFILTRATION
3	1	SS LIFTING CHAIN
4	1	LIFT-OUT HANDLE
5	1	1 1/4" x 1 1/4" x 1/4" ROLLED SUPPORT
6	1	3000 MICRON SS FILTRATION BASKET
7	1	3000 MICRON SS FILTRATION BASKET
8	1	HYDROCARBON ABSORPTION PILLOW
9	1	2000 MICRON SS FILTRATION BASKET
10	1	2" DRAINAGE CELL WRAPPED WITH GEOTEXTILE FABRIC
11	1	BOTTOM TO CONTAIN (6) 3/8" HOLES TO ALLOW INFILTRATION
12	1	SS CABLE BRACKET
13	1	CONCRETE APRON (BY OTHERS)
14	1	24" DIA RING & COVER

MODEL #:	BASIN MODEL	OD	ID	H	W+2	CL	FILTERED FLOW Q _{FF} (CFS)	BY-PASS FLOW Q _{FB} (CFS)
RFH-24	HDPE-24	19"	21"	12"	21"	9 1/2"	9.12	0.38
RFH-36	HDPE-36	33"	31"	12"	35"	16 1/2"	16.22	0.38
RFH-48	HDPE-48	45"	43"	12"	47"	22 1/2"	22.30	0.38

SPECIFICATIONS

- BASIN:** BASIN IS CONSTRUCTED OF HIGH DENSITY POLYETHYLENE DRAINAGE PIPE CONFORMING TO ASTM F1648. ALL EXTRUDED WELDING SHALL BE PER ASTM F2880.
- BASKET:** BASKET AND TABS TO BE CONSTRUCTED OF 16GA SS 304 PERFORATED PLATE (3/8" HOLES ON 1/8" STAGGER)
- BASKET LIP:** BASKET LIP TO CONSTRUCTED OF 14GA SS 304 PLATE
- LIFT HANDLE:** HANDLE TO CONSTRUCTED OF 1/2" Ø SS 304 ROUND BAR
- OVERFLOW:** LOWER OVERFLOW ORIFICE TO BE CONSTRUCTED OF SS PERFORATED CYLINDER.

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PROJECT:					
CUSTOMER:					
ENGINEER:					
ORDER #:	PROJ #:				
DATE:	LOCATION:				
RAIN WATER HARVEST FILTRATION SYSTEM MODEL - RFH					
PM	PC	DRN	ENG	DWG. NO.	REV.
DATE	01/2018			RFH-1	A



Water Filtration

In forested areas, the water balance or natural hydrology is altered only by rainfall and associated fluctuations in infiltration, Evaporation, and transpiration from plant growth. But in urban areas, this natural hydrology is heavily modified because land has been cleared of vegetation and capped with “hard” or impervious surfaces. When it rains, most rainfall runs off of impervious surfaces such as roofs and roads and is then typically transported directly and quickly to waterways through a drainage system. As a result, stormwater reaches waterways more often, more quickly, and in greater volumes than waterways are naturally adapted to, as there are limited opportunities for infiltration, evaporation and transpiration via plants in the landscape.

The ParkUSA® RainFilter™ is a complete system designed to treat total suspended solids (TSS), debris, and trash from stormwater runoff. It presents a low footprint and is of special use on leadership in energy and environmental design (LEED) projects and green developments, among others. It consists of a high-density polyethylene (HDPE) construction tank, an internal stainless steel filter, and an optimal storage system.

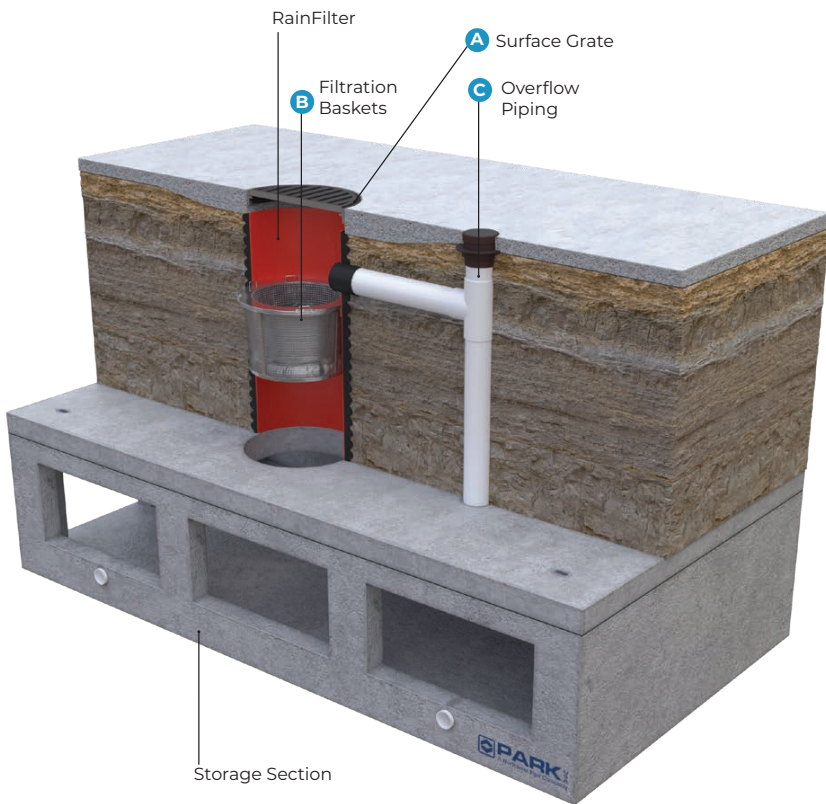


Features

- Various basket and storage equipment designs available
- Low profile design
- LEED compliant
- Texas manufactured
- Easy installation and maintenance



RW | RAINFILTER Standard



System Components

The RainFilter™ is designed with the following components:

- Stainless-steel basket screen
- High Density Polyethylene (HDPE) tank
- Stormwater storage equipment as required
- Piping

How it works

As the first surge of stormwater runoff enters the surface grate (A), it encounters the first of three stainless steel perforated baskets (B). The first debris basket is designed to retain substances greater than 8,000 microns (8mm). Common substances include leaves, rocks, branches, and trash. The first basket is also designed with a built in bypass (C) as precaution for high flow rates or trash build-up that can obstruct normal flow.

After passing through the first filtration basket, the coarse filtered stormwater reaches the second stage of filtration. The second perforated basket is rated to separate any solids greater than 3,000 microns (3mm). Within the second basket, there are hydrocarbon pillows designed to filter and reduce the fuels and oils that are mixed with the stormwater runoff.

The final filtration basket retains solids that are greater than 2,000 microns (2mm) in size. After passing through the RainFilter™'s three-step filtration process, the stormwater runoff has significantly reduced TSS and is prepared for storage in an underground detention system.

Visit rainfilter.parkusa.com for more information and design assistance.

To request a quote or catalog, visit request.parkusa.com.

APPLICATIONS



Good to use
in BMPs



Incorporate
Vegetation



Low Impact
Development



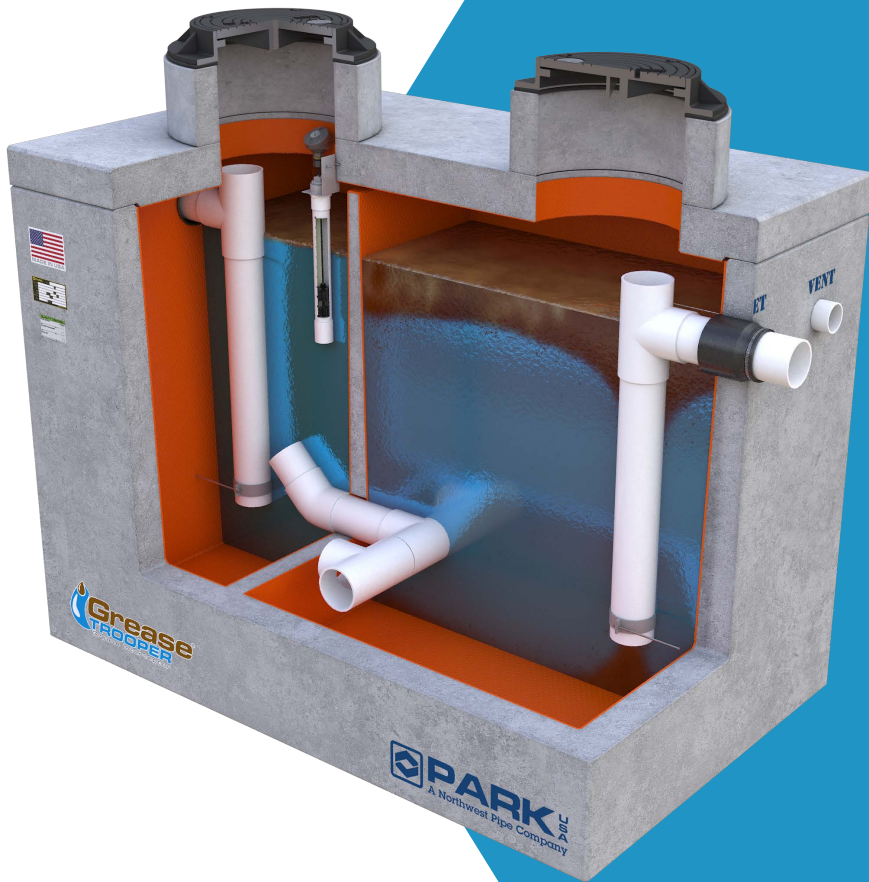
Green
Infrastructure



Sediments
Retention



Nutrients &
Pollutant Removal



PARK
USA
A Northwest Pipe Company

**ENGINEERING
FACTS**

GENERAL INFORMATION

The GreaseTrooper is a gravity grease interceptor (GGI) designed to reduce the amount of FOG (fats, oils, and greases) in wastewater. Grease interceptors are used in establishments to remove excessive amounts of grease that may interfere with the proper drainage and treatment of wastewater. The accumulation of FOG can escalate into blockages and sanitary sewer overflows (SSO) that disrupt wastewater treatment operations and increase costs.

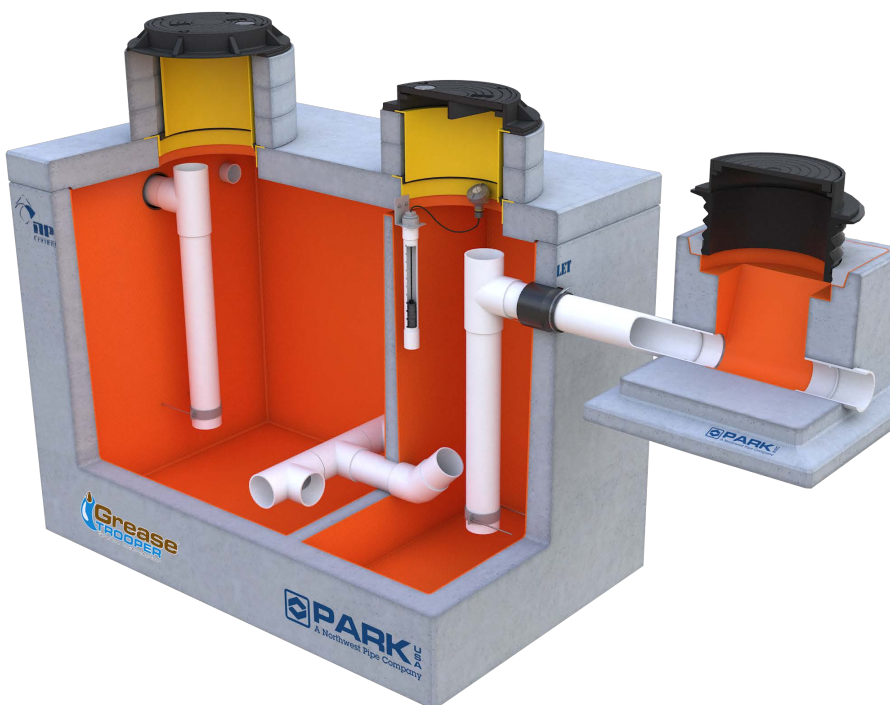
Most local plumbing codes prohibit any industrial user from discharging FOG over 100 mg/l into the public sewer system.

Typical applications include commercial wastewater, institutional kitchens, and food processing plants. The waste discharge from these facilities usually contains high-temperature water, high organic loads, FOG, suspended food particles, and detergents.

Sewers back up an estimated 400,000 times each year in the United States causing approximately 40,000 municipal sanitary system overflows (SSO). The EPA has determined that sewer pipe blockages are the leading cause of SSO's and grease is the primary cause of sewer blockages.

The general doctrine, of most Authorities Having Jurisdiction (AHJs), is one of "user pay", especially when it comes to solid waste. Therefore, it makes sense for establishments that create FOG to be responsible for its collection and disposal. Otherwise, the burden is on the municipality and ultimately the taxpayer to pay for sewer blockages and grease overloads at sewer treatment plants. It is prudent for the consultant engineer to utilize a Best Management Practice (BMP) that includes adequate sizing for the grease interceptor.

Typical applications include commercial and institutional kitchens and food processing plants. The waste discharge from these facilities usually contains high temperature water, high organic loads, FOG, suspended food particles, and detergents.



ParkUSA GreaseTroopers are grease interceptors are devices designed to reduce the amount of FOG (Fats, Oil and Greases) in wastewater. Grease interceptors are used in establishments to remove excessive amounts of grease that may interfere with the proper drainage and treatment of wastewater.

FEATURES

- Sizes from 500 gallons to 20,000 gallons
- Uniform Plumbing Code Listed (UPC)
- High-strength precast concrete, steel, or fiberglass construction
- Easy maintenance
- Choices of interior protective liners
- Remote maintenance alarm

New plumbing codes have eliminated the term “grease trap” from the code and now designated “Hydromechanical” Grease interceptor and “Gravity” Grease interceptor as the two types of grease interceptors. ParkUSA® sells both units, but Gravity Grease interceptors are by far the design of choice by engineers and city officials.

Hydromechanical Grease Interceptors incorporate air entrapment, the buoyancy of grease in the water and hydromechanical separations with interior baffling for FOG separation. Hydromechanical units incorporate a flow-control device that controls velocity as it enters the interceptor.

These are typically smaller interceptors installed indoors in the floor or under-the-sink. Hydromechanical grease interceptors require cleaning every two to four days and are typically cleaned by kitchen personnel. City health departments have concerns regarding proper cleanout and accurate documentation of maintenance. Many major cities have prohibited the installation of hydromechanical interceptors within food preparation areas without special variances.

Hydromechanical units are sized by determining flow-through rate (gpm) at peak demand for each fixture draining into the unit. Check with the local AHJ before specifying Hydromechanical units to determine if the jurisdiction allows these type units.

Gravity Grease Interceptors incorporate two or more compartments in series and use its inherent larger volume to maximize the pretreatment of the wastewater. By comparison, the Gravity Interceptor is more effective because of its larger volume that acts as a heat-sink. This allows for temperature differential (cool down) and more retention time of the greasy liquid to promote separation and coagulation of FOGs from the wastewater. The Gravity Interceptor also allows for solids retention from food grinders.

Gravity grease interceptors are generally located outdoors away from the kitchen areas. This eliminates the health department concerns regarding maintenance and disposal of FOGs. Recent findings by EPA of SSOs in cities and accompanying fines have caused states and municipalities to require haulers of grease to be registered. Owners are required to maintain documentation of “pump-out” for review by the health department.

GREASETROOPER MODELS

ParkUSA GT, typically, this Series of Interceptor is the most economic and preferred choice over all other interceptor types. The Park GT Series Interceptor is manufactured of Class II 4500 PSI precast concrete offering superior structural strength and longevity. As an option, the interceptor can be equipped with a variety of interior chemical proof liners including PVC.

ParkUSA GTS, this series is a steel unit and is recommended for applications where the grease interceptor is installed in a freestanding position, i.e., in a basement or on a slab.

ParkUSA GTP, this model is manufactured from high-density polyethylene (HDPE) material and is corrosion resistant and lightweight for above or below ground installations.

ParkUSA GTF, this model is manufactured from fiberglass reinforced polyester (FRP) material and is corrosion resistant and lightweight for above or below ground installations.



GT



GTS



GTF



GTP

SYSTEM COMPONENTS

The ParkUSA grease interceptor consists of the main components shown below:

Sensors: Indicate water level inside unit.

Control Panel: The Control System consists of a panel that receives signal from the high-level sensor, it is programed for easy use for the end-user.

Grease Interceptor: The shell of the unit can be constructed from Precast Concrete, Fiberglass, or Steel. Model names and configurations vary by material.

OPERATION

As the Plumbing and Drainage Institute states, upon entering the grease interceptor, the effluent is directed through the separation chamber of the interceptor by means of a system of baffles. The baffles serve to lengthen the flow path of the effluent to increase the time of separation while providing a non-turbulent environment for separation to take place. The entrained air will separate from the effluent quickly. As it does so, it accomplishes two things; First, the escaping air accelerates the separation of FOG as it rises rapidly to the surface of the water in the separation chamber. The rising air bubbles literally pull the FOG globules to the top of the water. Second, the air released then provides a small amount of positive pressure above the contents of the separation chamber to regulate the internal running water level of the grease interceptor.

DESIGN CONSIDERATION

One of the most controversial issues relating to a grease interceptor is: what fixtures or sources must be part of the FOG interceptor system. All drain-borne FOG is a problem and if the problem is going to be solved all sources of FOG must pass through the grease interceptor. There is little controversy about connecting pot sinks. There is some controversy about connecting dishwashers. There are some questions relating to floor drains, but discharge from food grinders (or garbage disposals) is almost universally required to bypass the grease interceptor or to have the pulverized solids removed from the waste stream before it enters the interceptor.

SIZING

Gravity Grease Interceptors are recommended to be sized utilizing Best Management Practices (BMP). The commonly used BMP sizing methods are the Seating Method and the Drainage Fixture Unit Method (2012 UPC). All methods are based on sizing according to local plumbing codes and on years of field performance testing with methods utilizing the relationship of the probable flow rate and retention time to estimate the grease interceptor size.

Seating Method: The different variables include number of seats or beds, gallons of wastewater per meal, storage capacity factor, number of hours open and loading factor.

$$(D) \times (MF) \times (GO) \times (RT) \times (ST) = \text{Size of Grease Interceptor (gallons)}$$

Where:

D = Total Number of Seats in Dining Area

MF = Meal Factor, based on establishment type & average time per meal:

1.33	Fast Food / Cafeteria (45min)
1.00	Restaurant (60min)
0.67	Fine Dining (90 min)
0.50	Banquet Hall & Commissaries (120 min)
0.375	School Cafeteria* (120 min)

*(lunches served over 120 min & 25 percent absentee/sack lunch factor rate)

GO = Gallons of wastewater per meal:

6	with dishwashing machine
5	without dishwashing machine
2	single service kitchen**
1	food waste disposal

RT = Retention Time:

2.5	commercial kitchen waste
1.5	single service kitchen

ST = Storage Factor, based on hours of operation:

1.0	operation of 8 hours
1.5	operation of 12 hours
2.0	operation of 16 hours
3.0	operation of 24 hours
1.5	single service kitchen**

** Single service kitchen: meals are served as take out or on disposable plates and utensils; facility clean-up is the only dishwashing involved.

Example #1:

A well known Seafood Restaurant is being designed with a seating capacity of 130 people, a full service kitchen, and an 8 hour operation schedule:

$$(D) \times (MF) \times (GO) \times (RT) \times (ST) = \text{Size of Grease Interceptor (gal)}$$

$$130 \times 1.00 \times 5 \times 2.5 \times 1.0 = 1625 \text{ gallons}$$

A 2,000 Gallon interceptor is selected

Example #2:

A popular Fast Food Restaurant is being designed with a seating capacity of 50 people, a single service kitchen, and a 24 hour operation schedule:

$$(D) \times (MF) \times (GO) \times (RT) \times (ST) =$$

Size of Grease Interceptor (gal)
 $50 \times 1.33 \times 2 \times 1.5 \times 3.0 = 598.5$ gallons

A 750 Gallon Interceptor is selected

Drainage Fixture Unit Method:

The DFU method of sizing typically results in a smaller grease interceptor than is recommended by ParkUSA but conforms to the latest 2012 Uniform Plumbing Code. The use of this method of sizing may result in a system that requires continuous maintenance and/or will clog facility piping and municipal sanitary systems.

Per UPC handbook definitions, a Fixture Unit is a quantity in terms of which the load-producing effects on the plumbing system of different kinds of plumbing fixtures are expressed on some arbitrarily chosen scale.

The first step is to quantify all the fixtures that could receive kitchen-type waste. It is important to note that only the fixtures that receive kitchen related waste are tabulated (not toilets, urinals, etc...) As published in IPC Table 709.1 or UPC Table 7-3, DFU's are tabulated for all the plumbing fixtures.

The following table from UPC Section 702.0, Fixture Unit Equivalents, covers fixtures and devices not shown in Table 7-3 and is more applicable to commercial establishments.

Example:

An Industrial Food Processing Plant has the following fixtures:

- Six floor drains
- Three hand sinks
- Two 3-compartment sinks
- Four 2-compartment sinks
- A pot sink

The fixtures are tabulated as follows:

FIXTURES	FLOW RATE GPM		DFUS
6	4" FLOOR DRAINS @ 2 DFU'S EACH	=	12
3	HAND SINKS 2 DFU'S EACH	=	6
2	3-COMP SERVICE SINKS 4 DFU'S EACH	=	8
4	2-COMP SERVICE SINKS 2 DFU'S EACH	=	8
1	POT SINKS 4 DFU'S EACH	=	4
1	DISHWASHER 4 DFU'S EACH	=	4
1	MOP SINKS 2 DFU EACH	=	2
TOTAL			44

A total of 44 DFU's are calculated. From the table provided above, a 1,250 gallon grease interceptor is selected. Below, current Grease Interceptor models are stated.

Standard GT Sizes

MODEL NUMBER	GRAVITY GAL	FLOW RATE GPM		MAX GREASE CAPACITY GAL	MAX SOLIDS CAPACITY GAL	DIMENSION INCHES	EMPTY WT. LBS
		AVERAGE (1)	INTERMITTENT (2)				
GT-500	500	17	26	275	174	94"X52"X54"	9,500
GT-750	750	25	38	410	260	94"X52"X72"	9,900
GT-1000	1,000	33	50	545	350	104"X60"X72"	13,350
GT-1250	1,250	42	63	690	440	110"X68"X72"	14,650
GT-1300	1,300	43	65	720	450	110"X68"X72"	14,650
GT-1500	1,500	50	75	820	530	110"X68"X84"	16,050
GT-2000	2,000	67	100	1,100	700	108"X72"X96"	21,250
GT-2500	2,500	83	125	1,375	875	156"X84"X84"	27,050
GT-2600	2,600	87	130	1,425	900	156"X84"X84"	27,050
GT-3000	3,000	100	150	1,650	1,050	156"X84"X96"	33,150

Wastewater Systems

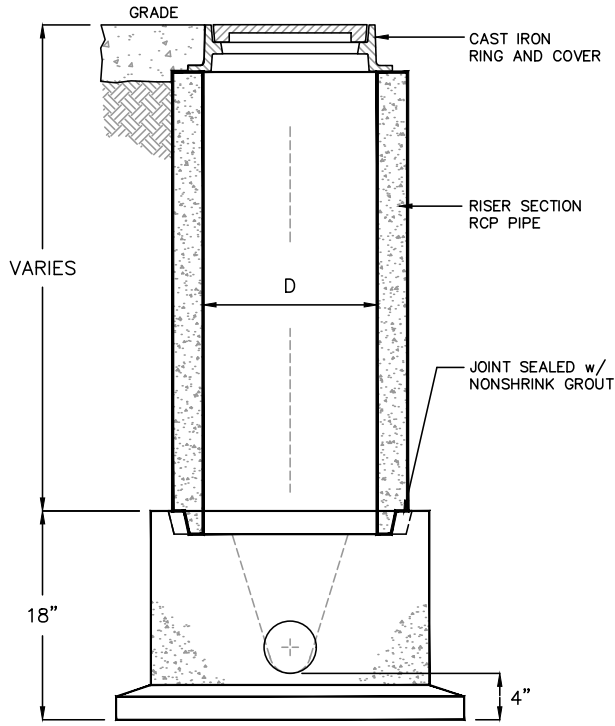
MAINTENANCE

One of the most important features for the successful operation of the grease interceptor is the maintenance program. Regardless of the size or design, an interceptor is only as good as its maintenance program. The interceptor should be located so that it will be easily accessible for inspection, cleaning and removal of collected FOG. The interceptor should be located near the source of the wastewater for the protection of the piping system.

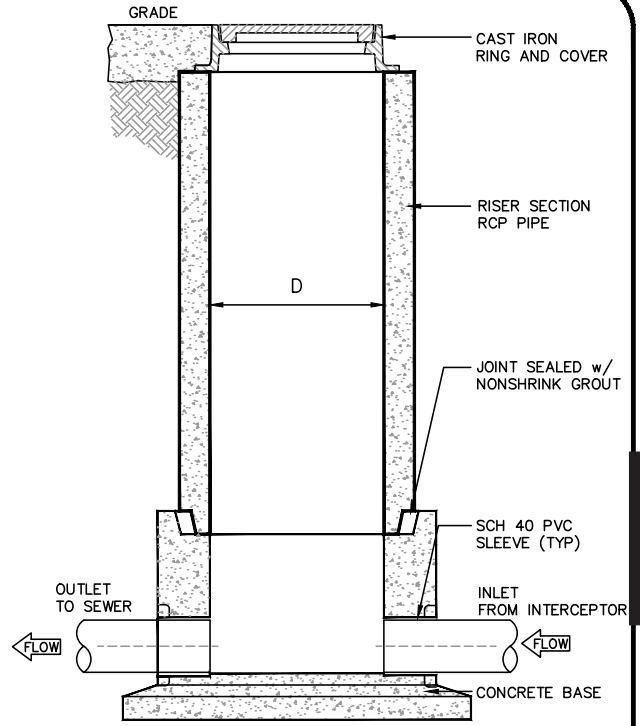
There should be an adequate number of access manholes to permit access for cleaning all areas of the interceptor. Access manholes should be located near the inlet and the outlet. The manholes should not be less than 20 inches in size. All manholes should extend to grade and be suitable for traffic loading for indoor and sensitive areas.

The grease interceptor should be cleaned (or pumped out) routinely to insure grease detention performance. Cleaning should be performed when the interceptor is at 75 percent of grease retention. The frequency of cleaning at any given installation will vary depending on use. Pumping frequencies for restaurants range from 30 to 90 days. Most AHJs have minimum requirements for pump out and require pump out manifest records be maintained for review by local health departments. Typically, pump out companies are required to be registered with the state's water quality agency.

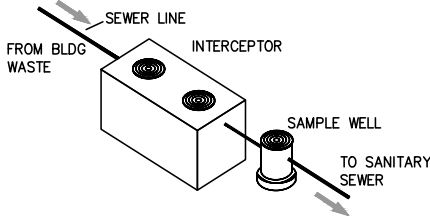




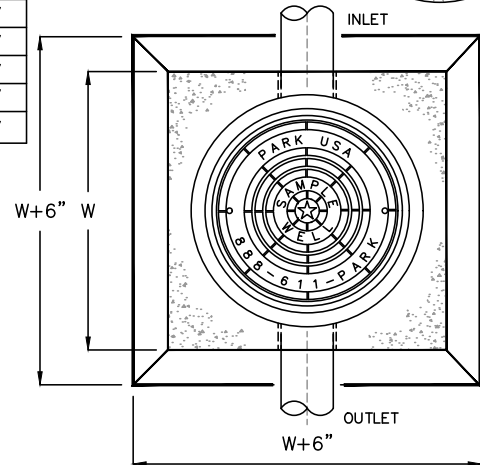
FRONT VIEW



SIDE VIEW



MODEL	DIAMETER "D"	IN & OUT PIPE SIZE	WIDTH "W"
SWB-154	15"	4"	24"
SWB-156	15"	6"	24"
SWB-158	15"	8"	24"
SWB-184	18"	4"	28"
SWB-186	18"	6"	28"
SWB-188	18"	8"	28"
SWB-244	24"	4"	34"
SWB-246	24"	6"	34"
SWB-248	24"	8"	34"



PLAN VIEW

NOTES

1. SAMPLING WELL MUST BE INSTALLED UNDER A SEPARATE PLUMBING PERMIT.
2. USE 15" FOR INSTALLATION 6'-0" DEEP AND LESS.
3. USE 24" FOR INSTALLATION GREATER THAN 6'-0" DEEP. (STD RING AND M.H. COVER REQUIRED)
4. SAMPLING WELL MUST BE SET IN A CIRCULAR OR SQUARE CONCRETE PAD (1'-0" GREATER THAN OUTSIDE DIAMETER OF PIPE.)
5. INSIDE INSTALLATION NOT PERMITTED, WHERE OUTSIDE INSTALLATION IS POSSIBLE.
6. INSTALLATION INSIDE BLDG MUST BE POURED IN PLACE (15"MIN) NO CONCRETE PIPE IS PERMITTED, (AIR-TIGHT COVER REQUIRED.)
7. LAWN INSTALLATION MUST BE 4" ABOVE FINISHED GRADE.
8. DRIVE & SIDEWALK INSTALLATION MUST BE BROUGHT TO FINISHED GRADE
9. TO BE INSTALLED ON PRIVATE PROPERTY, IN AN ACCESSIBLE LOCATION TO CITY PERSONNEL.

SPECIFICATIONS

CONCRETE: Class I/II concrete with of design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.

C.I. CASTINGS: Cast iron rings and grates are manufactured of grey cast iron conforming to ASTM A48 Class 30, Heavy-Duty AASHTO H20/HL93

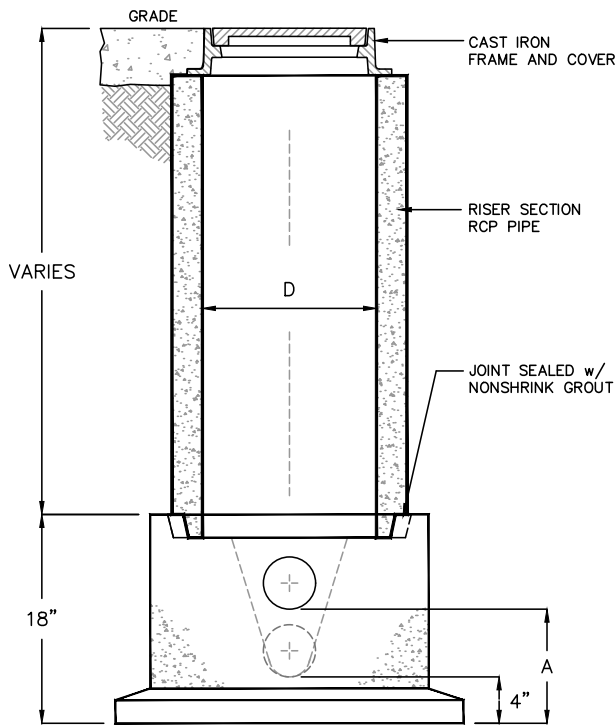


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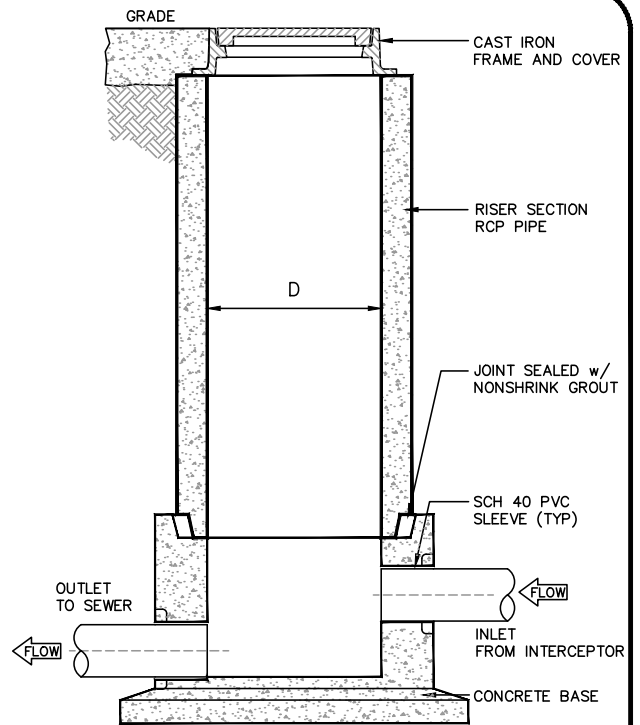


SAMPLE WELL BASIN

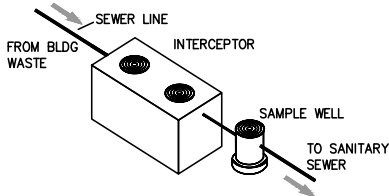
SCALE	NONE	DWG. NO.	REV.
DATE	2018	SWB-1	A



FRONT VIEW



SIDE VIEW

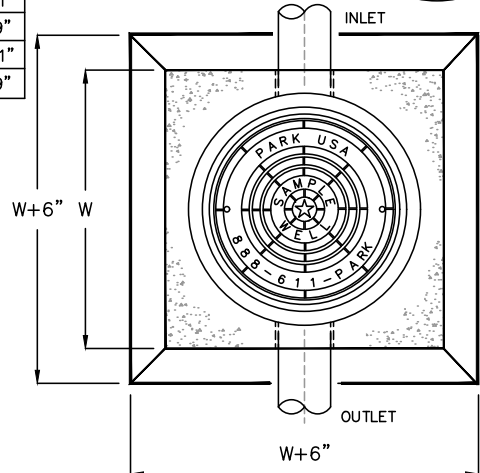


MODEL	DIAMETER "D"	IN & OUT PIPE SIZE	WIDTH "W"	"A"
SWB-154	15"	4"	24"	11"
SWB-156	15"	6"	24"	9"
SWB-184	18"	4"	28"	11"
SWB-186	18"	6"	28"	9"
SWB-244	24"	4"	34"	11"
SWB-246	24"	6"	34"	9"



NOTES

1. SAMPLING WELL MUST BE INSTALLED UNDER A SEPARATE PLUMBING PERMIT.
2. USE 15" T&G R.C.P. FOR INSTALLATION 6'-0" DEEP AND LESS.
3. USE 24" T&G R.C.P. FOR INSTALLATION GREATER THAN 6'-0" DEEP. (STD RING AND M.H. COVER REQUIRED).
4. SAMPLING WELL MUST BE SET IN A CIRCULAR OR SQUARE CONCRETE PAD (1'-0" GREATER THAN OUTSIDE DIAMETER OF PIPE).
5. INSIDE INSTALLATION NOT PERMITTED, WHERE OUTSIDE INSTALLATION IS POSSIBLE.
6. INSTALLATION INSIDE BLDG MUST BE POURED IN PLACE (15"MIN) NO CONCRETE PIPE IS PERMITTED, (AIR-TIGHT COVER REQUIRED).
7. LAWN INSTALLATION MUST BE 4" ABOVE FINISHED GRADE.
8. DRIVE & SIDEWALK INSTALLATION MUST BE BROUGHT TO FINISHED GRADE.
9. TO BE INSTALLED ON PRIVATE PROPERTY, IN AN ACCESSIBLE LOCATION TO CITY PERSONNEL.



PLAN VIEW

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SPECIFICATIONS

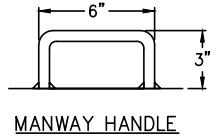
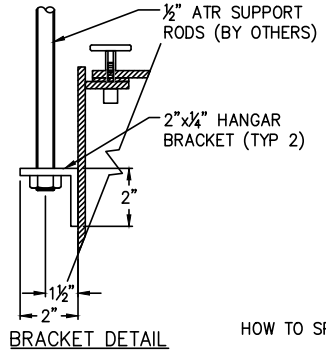
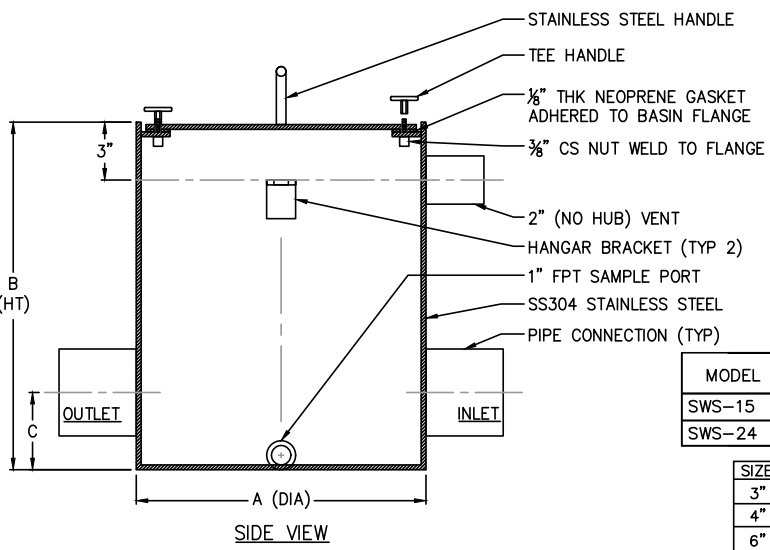
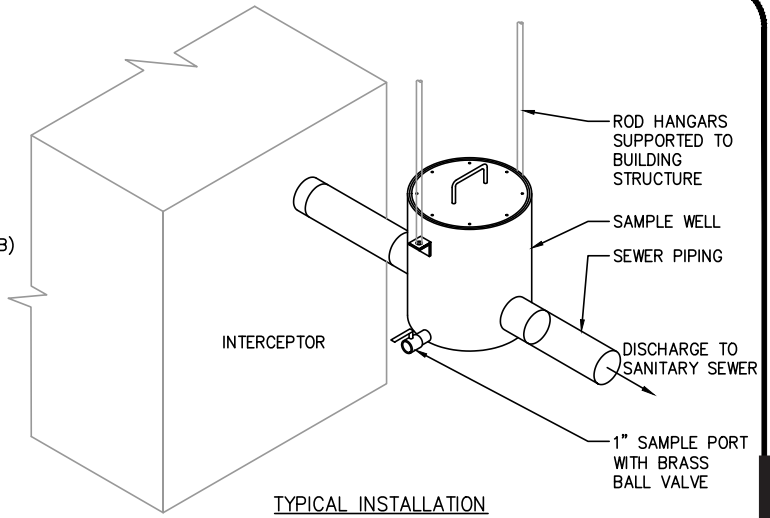
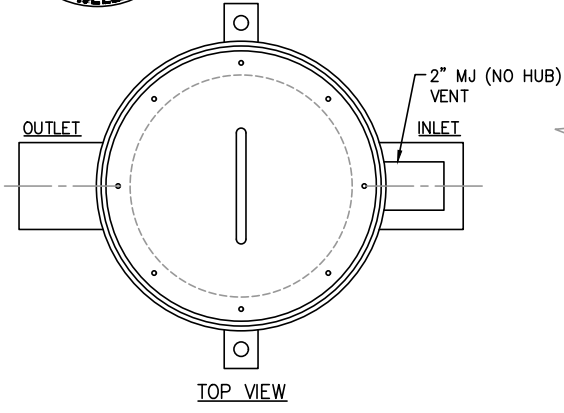
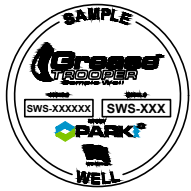
CONCRETE: Class I/II concrete with of design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.

C.I. CASTINGS: Cast iron frames and grates are manufactured of grey cast iron conforming to ASTM A48-76 Class 30, Heavy-Duty AASHTO H-20



SAMPLE WELL BASIN

SCALE	NONE	DWG. NO.	REV.
DATE	2018	SWB-2	A



MODEL	A	B
SWS-15	15"	18"
SWS-24	24"	30"

SIZE	C
3"	2 1/2"
4"	4"
6"	4"
8"	5"

HOW TO SPECIFY:
SWS- [] [] [] []
SAMPLE WELL SIZE:
15 - 15" DIA
24 - 24" DIA
INLET/OUTLET SIZE:
3 - 3"
4 - 4"
6 - 6"
8 - 8"
INLET/OUTLET TYPE:
H - NO HUB
T - FPT
F - FLANGE
V - VICTAULIC

SPECIFICATIONS

THE MODEL SWS SAMPLE WELL ASSEMBLY IS CONSTRUCTED OF TYPE 304 STAINLESS STEEL CONFORMING TO ASTM A480 STANDARDS. THE UNIT SHALL INCLUDE INLET, OUTLET, AND SAMPLE PORT CONNECTIONS, REMOVABLE LID WITH SECURING BOLTS AND GASKET, AND SUPPORT BRACKETS.

TYPICAL APPLICATIONS

A SAMPLE WELL IS USED IN SEWER APPLICATIONS TO ALLOW FOR PERIODIC SAMPLING OF THE WASTEWATER (USUALLY REQUIRED BY THE ADMINISTRATIVE AUTHORITY). WASTEWATER SAMPLES ARE USED TO MONITOR THE PERFORMANCE OF GREASE/LINT INTERCEPTORS, OIL/WATER SEPARATORS, STORMWATER INTERCEPTORS, OR ACID NEUTRALIZATION TANKS.

SAMPLES ARE TAKEN FROM THE SAMPLE PORT OR BY REMOVING THE COVER. THE SAMPLE IS THEN SENT TO A LABORATORY FOR ANALYSIS FOR BOD, TSS, PH, AND OIL/GREASE CONTENT.

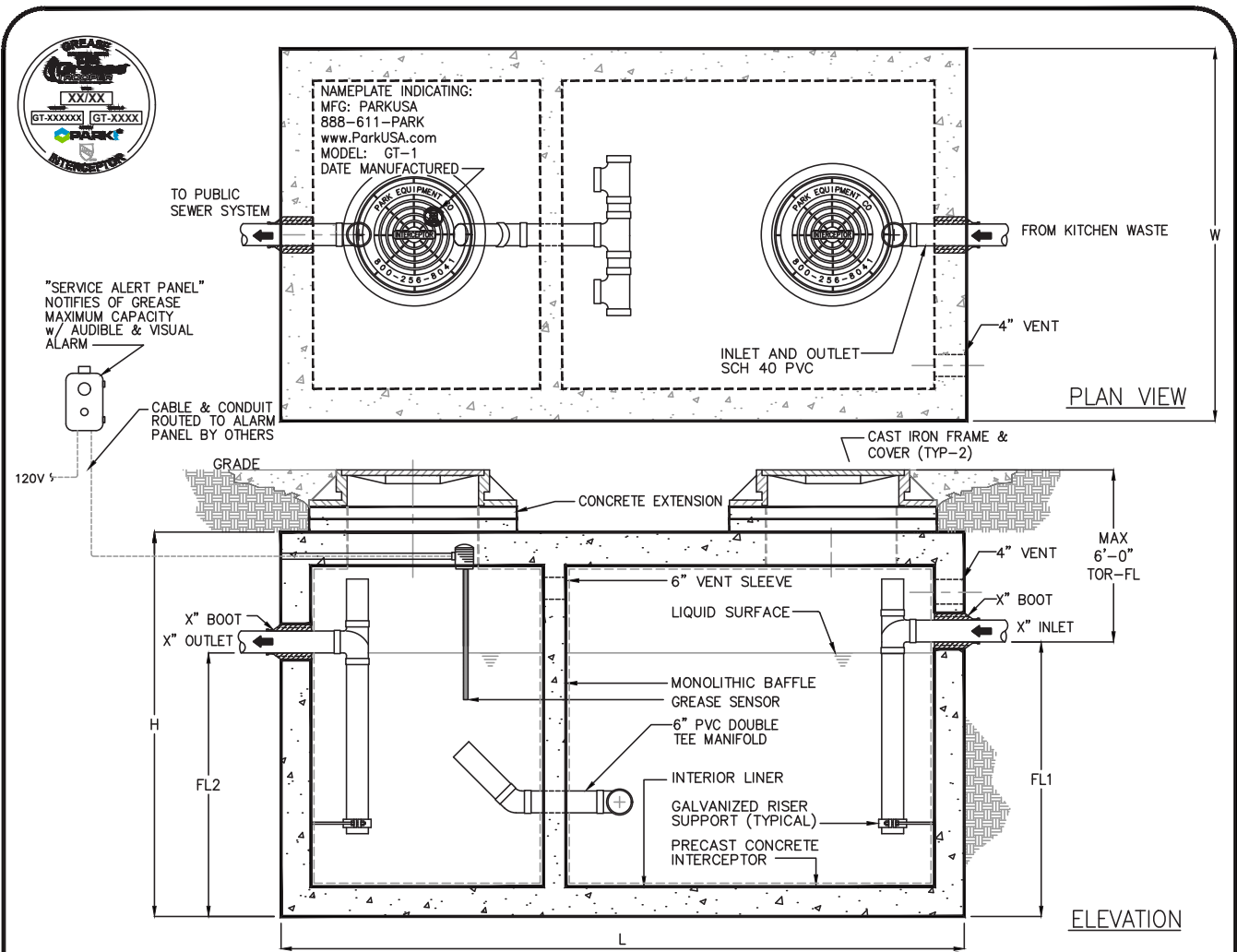
THE PARK MODEL SWS SAMPLE WELL IS RECOMMENDED FOR USE IN A NON-BURIED APPLICATIONS SUCH AS BASEMENTS. THE SAMPLE WELL SHOULD BE ADEQUATELY SUPPORTED FROM BUILDING STRUCTURE.



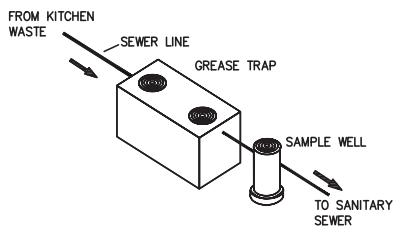
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A	.	.	.
REV	DATE	BY	DESCRIPTION
PROJECT: .			
CUSTOMER: .			
ENGINEER: .			
ORDER #:	.	PROJ #:	.
DATE:	.	LOCATION:	.
www.parkusa.com		888-611-PARK	
SAMPLE WELL BASIN MODEL SWS (ABOVE GRADE)			
PM	PC	DRN	ENG
DATE	12/19	DWG. NO. SWS-1	
			REV. A

SWS-1-STD



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**Grease
Trap**

TYPICAL APPLICATIONS INCLUDE COMMERCIAL AND INDUSTRIAL FOOD SERVICE KITCHENS WHERE EXCESSIVE GREASE MAY INTERFERE WITH THE PROPER DRAINAGE OF THE SEWER SYSTEM. THE GREASE INTERCEPTOR IS GENERALLY BURIED BELOW GRADE FOR GRAVITY FLOW SEWER SYSTEMS. A SAMPLE WELL IS UTILIZED ON THE OUTLET SIDE FOR SAMPLING BY THE LOCAL WATER AUTHORITY.

SPECIFICATIONS

- CONCRETE :** CLASS I/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR, FIRST STAGE OF WALL AND BAFFLE WITH SECTIONAL RISER TO REQUIRED DEPTH. (MONOLITHIC BAFFLE REQUIRED, SLIDE-IN TYPE IS NOT ACCEPTABLE)
- REINFORCEMENT:** GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS:** MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48 CLASS 30. MANHOLE SHALL BE NOMINAL 24 INCH DIAMETER AND BE TRAFFIC DUTY.

GREASE INTERCEPTOR SCHEDULE

MODEL NO.	CAPACITY USGal	GREASE CAP. (LBS)	EMPTY WT (LBS)	LENGTH L	WIDTH W	HEIGHT H	INLET FL1	OUTLET FL2
GT-500	500	1,200	9,500	7'-10"	4'-4"	4'-6"	3'-3"	3'-0"
GT-750	750	1,700	9,900	7'-10"	4'-4"	6'-0"	4'-5"	4'-2"
GT-1000	1,000	2,300	13,350	8'-8"	5'-0"	6'-0"	4'-9"	4'-6"
GT-1250	1,250	2,900	14,650	9'-2"	5'-8"	6'-0"	4'-9"	4'-6"
GT-1500	1,500	3,500	16,050	9'-2"	5'-8"	7'-0"	5'-9"	5'-6"
GT-2000	2,000	4,600	21,250	9'-0"	6'-0"	8'-0"	6'-9"	6'-6"
GT-2500	2,500	5,700	27,050	13'-0"	7'-0"	7'-0"	5'-9"	5'-6"
GT-3000	3,000	6,900	33,150	13'-0"	7'-0"	8'-0"	6'-9"	6'-6"
GT-3500	3,500	8,000	38,550	13'-0"	7'-0"	8'-6"	7'-3"	7'-0"
GT-4000	4,000	9,300	38,100	16'-0"	8'-6"	7'-0"	5'-9"	5'-6"

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION

ENGINEERING DATA

THE GREASE INTERCEPTOR IS STRUCTURALLY & HYDRAULICALLY ENGINEERED TO CONFORM TO UPC/IPC AND REGIONAL PLUMBING CODES RECOMMENDED IN MOST CITIES. CONSULT WITH LOCAL AUTHORITIES FOR SPECIFIC APPLICATION REQUIREMENTS.

SHOP DRAWINGS SHALL INCLUDE COMPLETE STRUCTURAL & BOUYANCY CALCULATIONS CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER UPON REQUEST.

CONSULT WITH PARKUSA COMPANY FOR EXACT EXCAVATION DIMENSIONS & SHIPPING INFORMATION.

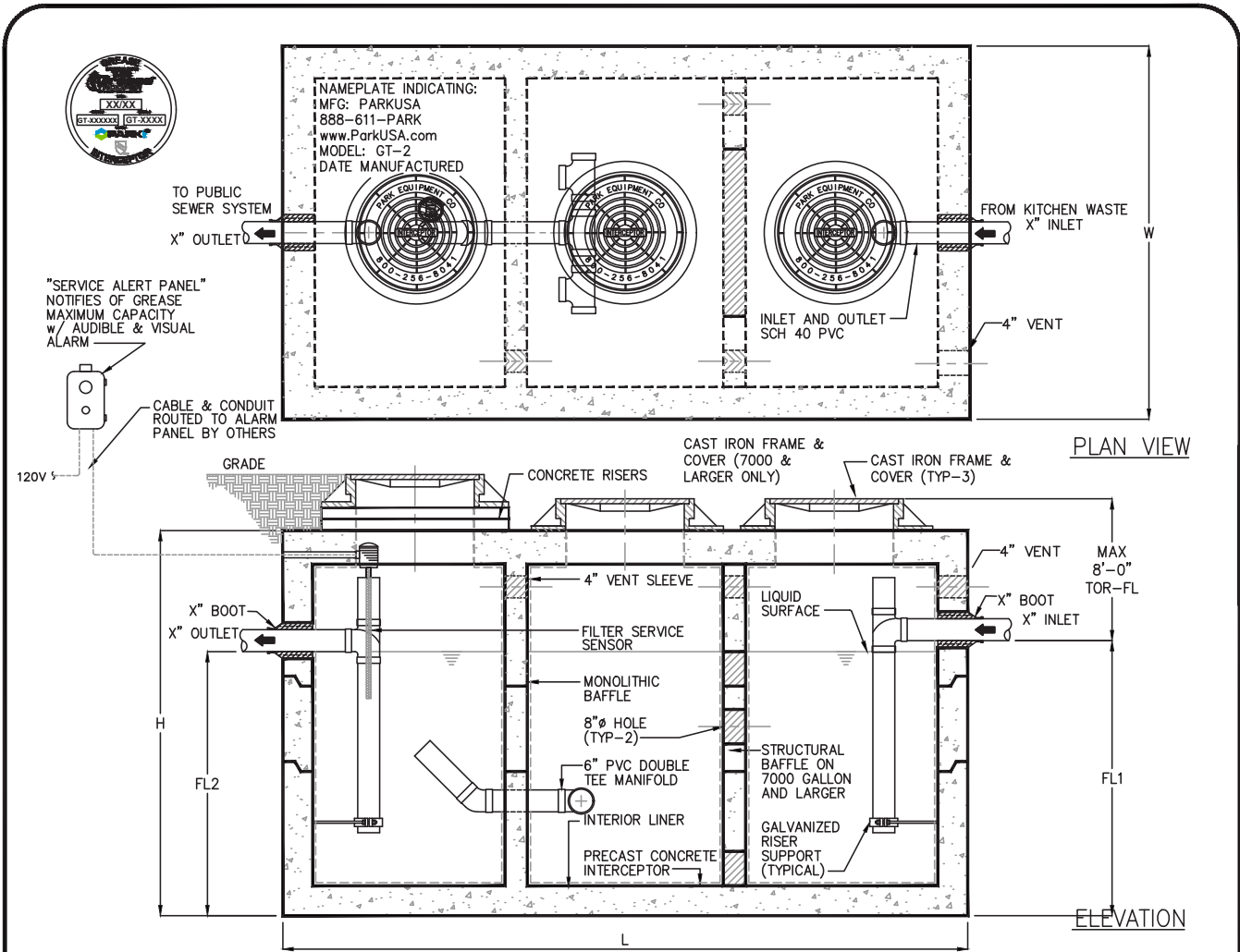


888.611.PARK
www.parkusa.com

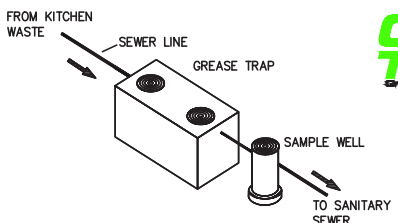
PARK USA
DESIGN FOR WATER

**GREASE INTERCEPTOR SERIES GT
500 THRU 4000 GALLON CAPACITY**

PM	DRN	ENG	DWG. NO.	REV.
DATE	06/18		GT-1	A



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Grease Trooper
Grease Interceptor Systems

TYPICAL APPLICATIONS INCLUDE COMMERCIAL AND INDUSTRIAL FOOD SERVICE KITCHENS WHERE EXCESSIVE GREASE MAY INTERFERE WITH THE PROPER DRAINAGE OF THE SEWER SYSTEM. THE GREASE INTERCEPTOR IS GENERALLY BURIED BELOW GRADE FOR GRAVITY FLOW SEWER SYSTEMS. A SAMPLE WELL IS UTILIZED ON THE OUTLET SIDE FOR SAMPLING BY THE LOCAL WATER AUTHORITY.

SPECIFICATIONS

- CONCRETE : CLASS 1/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR, FIRST STAGE OF WALL AND BAFFLE WITH SECTIONAL RISER TO REQUIRED DEPTH. (MONOLITHIC BAFFLE REQUIRED, SLIDE-IN TYPE IS NOT ACCEPTABLE)
- REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS: MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48 CLASS 30. MANHOLE SHALL BE NOMINAL 24 INCH DIAMETER AND BE TRAFFIC DUTY.

GREASE INTERCEPTOR SCHEDULE

MODEL NO.	CAPACITY USGal	GREASE CAP. (LBS)	EMPTY WT (LBS)	LENGTH L	WIDTH W	HEIGHT H	INLET FL1	OUTLET FL2
GT-5000	5,000	11,600	41,550	16'-0"	8'-6"	8'-0"	6'-9"	6'-6"
GT-6000	6,000	13,860	44,700	16'-0"	8'-6"	9'-0"	7'-9"	7'-6"
GT-7000	7,000	16,200	59,908	18'-0"	9'-0"	9'-2"	7'-11"	7'-8"
GT-8000	8,000	18,480	65,018	18'-0"	9'-0"	10'-0"	8'-9"	8'-6"
GT-9000	9,000	21,000	69,116	18'-0"	9'-0"	10'-10"	9'-7"	9'-4"
GT-10000	10,000	23,100	85,760	21'-2"	11'-2"	8'-8"	7'-5"	7'-2"
GT-11000	11,000	25,410	89,950	21'-2"	11'-2"	9'-6"	8'-3"	8'-0"
GT-12000	12,000	27,220	93,280	21'-2"	11'-2"	10'-0"	8'-9"	8'-6"
GT-13000	13,000	30,020	97,960	21'-2"	11'-2"	10'-6"	9'-3"	9'-0"
GT-14000	14,000	32,340	101,040	21'-2"	11'-2"	11'-2"	9'-11"	9'-8"
GT-15000	15,000	34,650	107,700	21'-2"	11'-2"	12'-2"	10'-11"	10'-8"

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION

ENGINEERING DATA

THE GREASE INTERCEPTOR IS STRUCTURALLY & HYDRAULICALLY ENGINEERED TO CONFORM TO REGIONAL PLUMBING CODES RECOMMENDED IN MOST CITIES. CONSULT WITH LOCAL AUTHORITIES FOR SPECIFIC APPLICATION REQUIREMENTS.
SHOP DRAWINGS SHALL INCLUDE COMPLETE STRUCTURAL & BOUANCY CALCULATIONS CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER UPON REQUEST.
CONSULT WITH PARK EQUIPMENT COMPANY FOR EXACT EXCAVATION DIMENSIONS & SHIPPING INFORMATION.



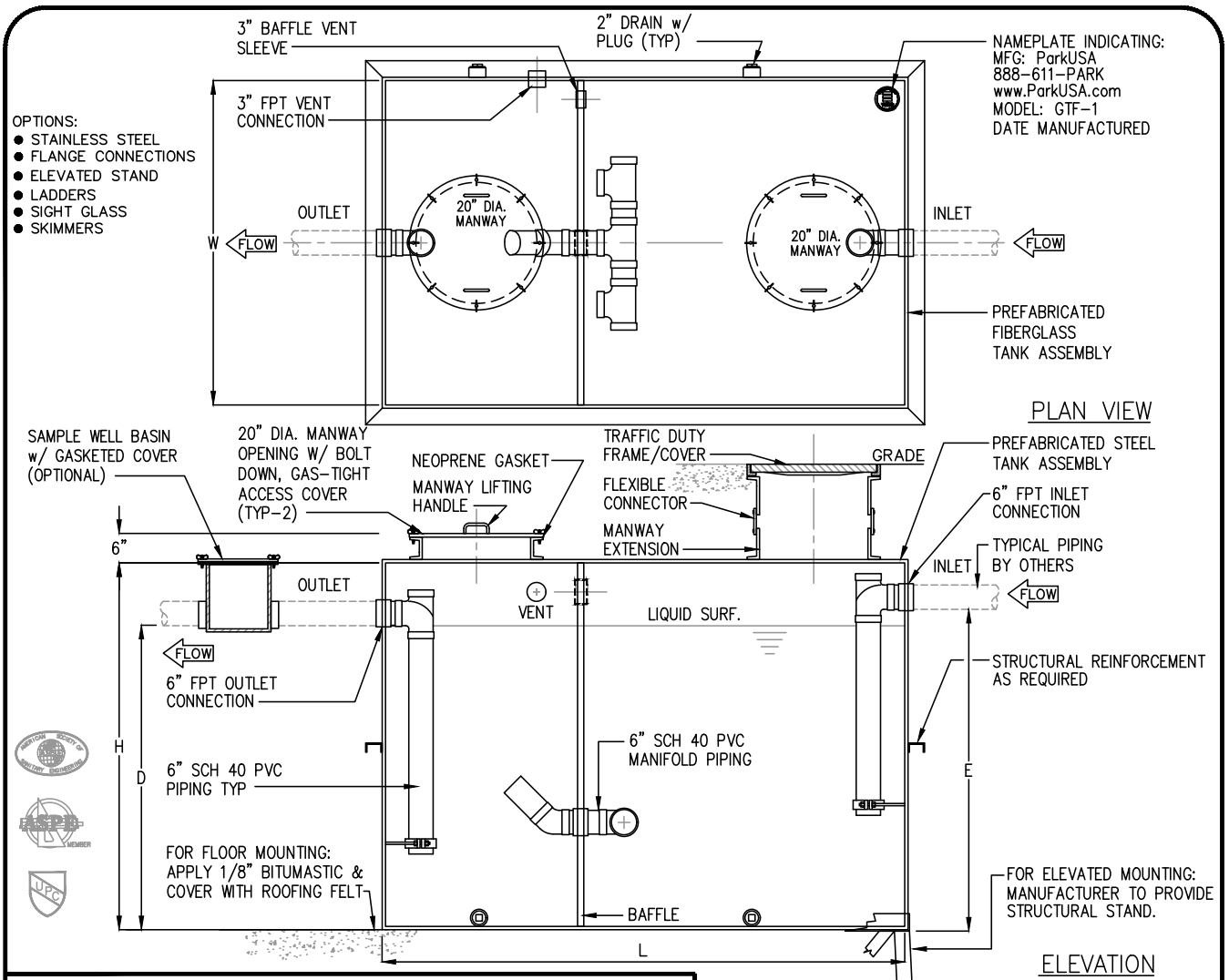
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PARK USA
DESIGN FOR WATER

GREASE INTERCEPTOR SERIES GT
5000 THRU 15000 GALLON CAPACITY

PM	DRN	ENG	DWG. NO.	REV.
DATE	06/18		GT-2	A

Wastewater
Systems



- OPTIONS:
- STAINLESS STEEL
 - FLANGE CONNECTIONS
 - ELEVATED STAND
 - LADDERS
 - SIGHT GLASS
 - SKIMMERS

NAMEPLATE INDICATING:
MFG: ParkUSA
888-611-PARK
www.ParkUSA.com
MODEL: GTF-1
DATE MANUFACTURED

SAMPLE WELL BASIN
w/ GASKETED COVER
(OPTIONAL)



Specifications

PROVIDE & INSTALL GREASE INTERCEPTOR AS MANUFACTURED BY PARK EQUIPMENT COMPANY, OR PREAPPROVED EQUAL. THE INTERCEPTOR SHALL BE DESIGNED FOR GRAVITY SEPARATION OF GREASE & SOLIDS FROM KITCHEN WASTEWATER. THE GREASE INTERCEPTOR SHALL BE DESIGNED IN CONFORMANCE TO THE UNIFORM PLUMBING CODE AND LOCAL CODE REQUIREMENTS. THE INTERCEPTOR SHALL BE A STANDARD PRODUCT OF SUCH A COMPANY REGULARLY ENGAGED IN THE MANUFACTURE OF SUCH EQUIPMENT (NO SUBCONTRACTING OF TANK WILL BE PERMITTED). MANUFACTURER SHALL PROVIDE A WRITTEN WARRANTY FOR ONE YEAR.

INTERCEPTOR SHALL BE DESIGNED TO WITHSTAND STATIC & HYDRAULIC LOADING WHILE EMPTY & DURING OPERATION. THE INTERCEPTOR SHALL BE CONSTRUCTED OF FIBERGLASS WITH STRUCTURAL SUPPORTS FOR ALL COMPONENTS, INCLUDING; TANK, WEIRS, FLOW DISSIPATORS, & ENERGY DISSIPATER DEVICES. ALL COMPONENTS SHALL BE OF A CORROSION RESISTANT MATERIAL OR BE COATED WITH EPOXY.

INTERCEPTOR SHALL HAVE LIFTING LUGS AS REQUIRED FOR PLACEMENT IN CONFINED SPACES. TWO 20" DIAMETER MANWAYS WITH GASKETS AND BOLTS ARE REQUIRED ON EACH INTERCEPTOR TO PERMIT ACCESS FOR MAINTENANCE.

INTERCEPTOR SHALL BE COMMERCIALY SANDBLASTED PER SSPC-SP10 AND BE COATED WITH WITH CORROSION INHIBITING TWO-PART EPOXY ON INTERIOR & EXTERIOR.

SUBMITTAL OF INTERCEPTOR SHALL BE APPROVED BY ENGINEER PRIOR TO FABRICATION. SUBMITTAL SHALL INCLUDE, SIZE CAPACITY, GREASE & SOLIDS RETENTION CAPACITY, DIMENSIONS, LOCATION & SIZES OF ALL PENETRATIONS, & MATERIAL SPECIFICATIONS. THE FABRICATION DRAWINGS SHALL BE CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER.

THE SITE BE VISITED PRIOR TO FABRICATION TO VERIFY ACCESSIBILITY & PROPOSED LOCATION OF THE INTERCEPTOR. A REPRESENTATIVE OF THE MANUFACTURER SHALL BE PRESENT DURING PLACEMENT.

MODEL	TANK SIZE	L	W	H	D	E	EMPTY WT-LBS	GROSS WT-LBS
GTF-750	750 GAL	6'-0"	4'-0"	5'-6"	4'-2"	4'-5"	2,200	8,460
GTF-1000	1000 GAL	8'-0"	4'-0"	5'-6"	4'-2"	4'-5"	2,600	11,000
GTF-1500	1400 GAL	8'-0"	5'-0"	6'-0"	5'-0"	5'-3"	3,000	14,700
GTF-2000	2000 GAL	10'-0"	6'-0"	5'-6"	4'-6"	4'-9"	3,500	20,000
GTF-2500	2500 GAL	10'-0"	6'-0"	6'-6"	5'-6"	5'-9"	4,000	25,000
GTF-3000	3000 GAL	12'-0"	6'-0"	6'-0"	5'-6"	5'-9"	5,000	30,000
GTF-3500	3500 GAL	13'-0"	7'-0"	6'-0"	5'-2"	5'-5"	5,500	36,000
GTF-4000	4000 GAL	13'-0"	8'-0"	6'-2"	5'-2"	5'-5"	6,000	40,000
GTF-5000	5000 GAL	16'-0"	7'-0"	7'-0"	6'-0"	6'-3"	8,000	50,000

LARGER SIZES ARE AVAILABLE & DIMENSIONS CAN BE VARIED TO FIT APPLICATION
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PROJECT: _____

CUSTOMER: _____

ENGINEER: _____

ORDER #: _____

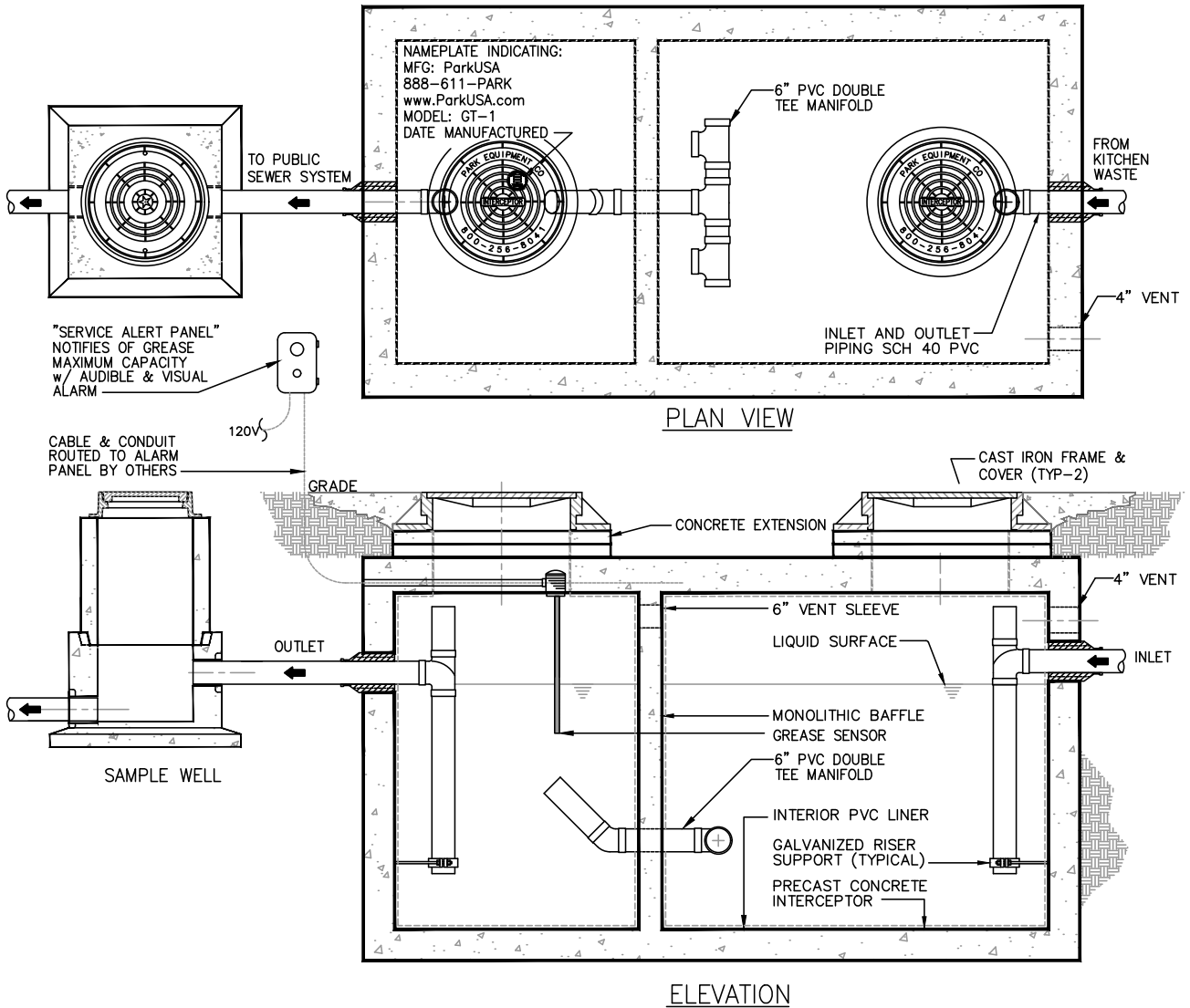
PROJ #: _____

DATE: _____



**FABRICATED GREASE INTERCEPTOR
MODEL GTF**

PM	DRN	ENG	DWG. NO.	REV.
			GTF-1	A
DATE			2018	



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Specifications

CONCRETE: Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor, first stage of wall and baffle with sectional riser to required depth. (Monolithic baffle required, slide-in type is not acceptable) gross empty weight as indicated.

REINFORCEMENT: Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal.

C.I. CASTINGS: Manhole frames, covers or grates are manufactured of grey cast iron conforming to ASTM A48-76 Class 30. Manhole shall have 24 inch inside diameter and be traffic duty.

Engineering Data

Interceptor is structurally and hydraulically engineered conforming to Uniform Plumbing Code. Nominal liquid capacity as indicated on plan.

Shop drawings shall include complete structural & buoyancy calculations certified by a registered engineer upon request.

Field excavation and preparation shall be completed prior to delivery of interceptor. Use dimensional data as shown.

PROJECT: _____

CUSTOMER: _____

ENGINEER: _____

ORDER #: _____

PROJ #: _____

DATE: _____



TYPICAL GREASE INTERCEPTOR DIAGRAM

PM	DRN	ENG	DWG. NO.	REV.
DATE	2018		GTINST-01	A

SPECIFICATIONS

TYPICAL APPLICATIONS INCLUDE COMMERCIAL AND INDUSTRIAL FOOD SERVICE MANHOLE SYSTEMS, RESTAURANTS, HOTELS, AND GREASE INTERCEPTORS IN THE SEWER SYSTEM. THE GREASE INTERCEPTOR IS GENERALLY BURIED BELOW GRADE FOR GRANTY FLOW SERVICE. A MANHOLE WITH A COVER IS UTILIZED ON THE OUTLET SIDE FOR SAMPLING BY THE LOCAL WATER AUTHORITY.

THE TANK SHALL BE CONSTRUCTED FROM COMPOSITE REINFORCED FIBERGLASS TANK SHALL BE MANUFACTURED IN ACCORDANCE WITH ALL APPLICABLE STANDARDS, MANHOLE SHALL BE TRAFFIC DUTY, CAPS, AND BATTLE.

MANHOLE COVER MANUFACTURED OF HIGH DENSITY POLYETHYLENE (HDPE) WITH AN INSET BOLT PATTERN AND STAINLESS STEEL HANDLES.

FIBERGLASS COVER: MANHOLE COVER MANUFACTURED OF COMPOSITE REINFORCED FIBERGLASS, HAVING MANHOLE BOLT EXTENSIONS (BY EXTENSIONS)

ALL CASINGS: MANHOLE FRAMES, HANDLES OR PARTS ARE MANUFACTURED OF DUCTILE IRON CONFORMING TO ASTM A536, ASBESTO MASONRY, AND ASBESTO MASONRY STANDARDS. MANHOLE SHALL BE TRAFFIC DUTY.

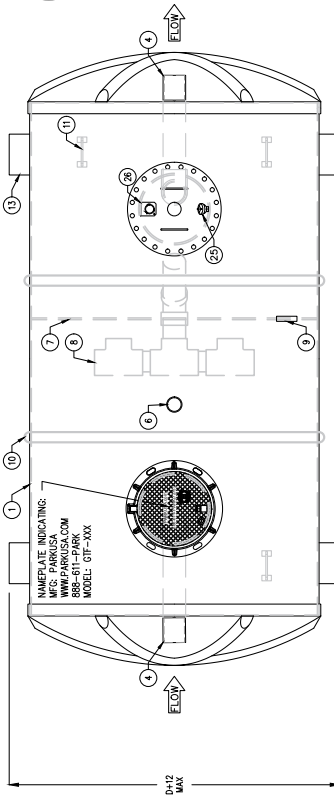
ENGINEERING DATA

THE GREASE INTERCEPTOR IS STRUCTURALLY & HYDRAULICALLY ENGINEERED TO CONFORM TO REGIONAL PLUMBING CODES RECOMMENDED IN MOST CITIES. CONSULT LOCAL AUTHORITIES FOR SPECIFIC APPLICATION REQUIREMENTS.

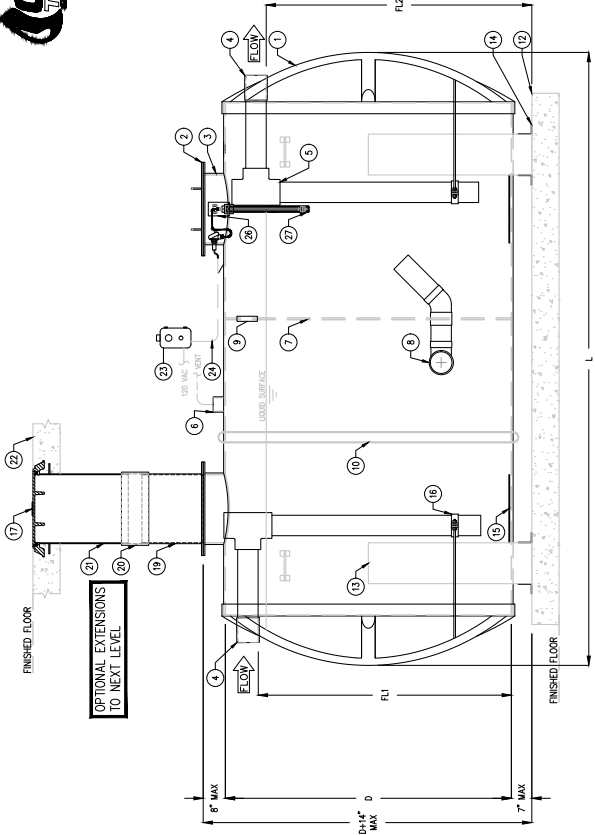
CONSULT WITH PARK USA FOR EXACT INSTALLATION DIMENSIONS & SHIPPING INFORMATION.

MODEL	NOMINAL DIAMETER (IN)	NOMINAL CAPACITY (GAL)	SCHEDULE OF SIZES			OVERALL LENGTH (FT)	INLET FLANGE (IN)	OUTLET FLANGE (IN)	SINGLE WALL (IN)	DOUBLE WALL (IN)	NET WT. (LBS)
			INLET (IN)	OUTLET (IN)	OVERALL LENGTH (FT)						
GI-500	500	4-2"	3-3"	3-3"	3-2"	800	1100	1100	1100	1100	1100
GI-750	750	4-2"	11-4"	3-3"	3-3"	1500	1600	1600	1600	1600	1600
GI-1000	1000	4-2"	16-2"	3-3"	3-3"	2000	2100	2100	2100	2100	2100
GI-1500	1500	6-2"	10-2"	5-3"	5-3"	1200	1800	1800	1800	1800	1800
GI-2000	2000	6-2"	13-6"	5-3"	5-3"	1500	2000	2000	2000	2000	2000
GI-3000	3000	8-2"	12-3"	7-3"	7-3"	1800	2400	2400	2400	2400	2400
GI-3500	3500	8-2"	15-1"	7-3"	7-3"	2000	2600	2600	2600	2600	2600
GI-4000	4000	8-2"	17-9"	7-3"	7-3"	2200	2800	2800	2800	2800	2800
GI-4500	4500	8-2"	20-1"	7-3"	7-3"	2400	3000	3000	3000	3000	3000
GI-5000	5000	8-2"	23-1"	7-3"	7-3"	2600	3200	3200	3200	3200	3200
GI-6000	6000	8-2"	26-1"	7-3"	7-3"	2800	3400	3400	3400	3400	3400
GI-7000	7000	8-2"	28-1"	7-3"	7-3"	3000	3600	3600	3600	3600	3600
GI-8000	8000	8-2"	30-9"	7-3"	7-3"	3200	3800	3800	3800	3800	3800
GI-9000	9000	8-2"	33-9"	7-3"	7-3"	3400	4000	4000	4000	4000	4000
GI-10,000	10000	10-2"	21-5"	9-3"	9-3"	4800	5000	5000	5000	5000	5000
GI-11,000	11000	10-2"	24-5"	9-3"	9-3"	5200	5400	5400	5400	5400	5400
GI-12,000	12000	10-2"	27-5"	9-3"	9-3"	5600	5800	5800	5800	5800	5800
GI-13,000	13000	10-2"	27-0"	9-3"	9-3"	6100	6300	6300	6300	6300	6300
GI-14,000	14000	10-2"	29-5"	9-3"	9-3"	6600	6800	6800	6800	6800	6800
GI-15,000	15000	10-2"	29-5"	9-3"	9-3"	6900	7100	7100	7100	7100	7100

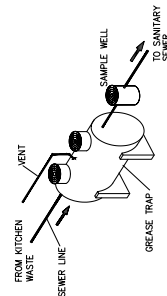
- NOTES:
1. NOMINAL SIZE AND CAPACITY AVAILABLE
 2. DIMENSIONS BASED ON MAXIMUM 4" PIPE SIZE
 3. DIMENSIONS MAY VARY SLIGHTLY, NOTIFY OF ANY CONSTRAINTS
 4. EXTERNAL DIMENSIONS MAY VARY
 5. EXTERNAL DIMENSIONS MAY VARY
 6. 6000 GALLONS & GREATER ARE OPTIONAL W/3 COMPARTMENTS



PLAN VIEW



ELEVATION VIEW



STANDARD APPLICATION

MARK	QTY	KEYED NOTES	DESCRIPTION
1	1	1	REINFORCED FIBERGLASS GREASE INTERCEPTOR
2	2	2	HDPE ACCESS MANHOLE COVER
3	2	2	FIBERGLASS MANHOLE EXTENSION
4	2	2	HDPE COPING
5	2	2	HDPE PVC TRIMP & CLEANOUT
6	1	1	PROP
7	1	1	INTERIOR BATTLE
8	1	1	HDPE DOUBLE TEE MANHOLE
9	1	1	HDPE SLEEVE IN BATTLE
10	1	1	STRUCTURAL SUPPORT RIG (AS REQ'D)
11	4	4	LIFTING LUGS CONCRETE HOUSING/PROP
12	1	1	PAU (BY OTHERS)
13	2	2	TANK SADDLE
14	8	8	ANCHOR BRACKETS FOR FLOOR
15	2	2	WOODING
16	2	2	ANCHOR STRAP BRACKETS
17	2	2	MANHOLE INDICATING
18	1	1	NOT USED
19	2	2	HDPE MANHOLE EXTENSION, BOLDED
20	2	2	RUBBER BOOT CONNECTOR (OPTIONAL)
21	2	2	CAST-IN MANHOLE W/ EXTENSION & WATERSTOP RING (OPTIONAL)
22	1	1	CONCRETE ARMOR (BY OTHERS)
23	1	1	CONTROL PANEL W/ AIRBLE & (OPTIONAL)
24	1	1	CABLE & CONDUIT ROUTED TO CONTROL PANEL (BY OTHERS)
25	1	1	ELECTRICAL CONDUIT JUNCTION BOX
26	1	1	FULL THREAD FLAT BRACKET
27	1	1	(OPTIONAL) LEVEL SADDLE
28	1	1	NOT USED

09-210
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REV	A
DATE	06/2019
PROJECT	GREASE INTERCEPTOR
CUSTOMER	(ABOVE GRADE) MODEL GI-AG 500 THRU 5000
ENGINEER	WWW.PARKUSA.COM 888-611-PARK
ORDER #	
DATE	
LOCATION	
PROJ #	
S/N #	
REV	A
DATE	06/2019
PROJECT	GI-AG



SPECIFICATIONS

THE GREASE INTERCEPTOR IS MANUFACTURED FROM 304 STAINLESS STEEL OR 316L STAINLESS STEEL. THE GREASE INTERCEPTOR IS DESIGNED TO BE INSTALLED IN THE SEWER SYSTEM. THE GREASE INTERCEPTOR IS MANUFACTURED TO MEET THE REQUIREMENTS OF THE LOCAL WATER AUTHORITY. THE TANK SHALL BE CONSTRUCTED FROM ALL-STEEL OR ALL-CONCRETE. THE TANK SHALL HAVE ONE-PIECE CONSTRUCTION AT THE END CAPS, AND BARGE.

THE TANK SHALL BE CONSTRUCTED FROM 304 STAINLESS STEEL OR 316L STAINLESS STEEL. THE TANK SHALL HAVE ONE-PIECE CONSTRUCTION AT THE END CAPS, AND BARGE.

MANHOLE COVER MANUFACTURED OF HIGH DENSITY POLYETHYLENE PLASTIC. MANHOLE WALKWAY BOLT PATTERN AND STAINLESS STEEL HANDLES.

MANHOLE COVER MANUFACTURED OF COMPOSITE FIBERGLASS REINFORCED PLASTIC. MANHOLE WALKWAY BOLT PATTERN AND STAINLESS STEEL HANDLES.

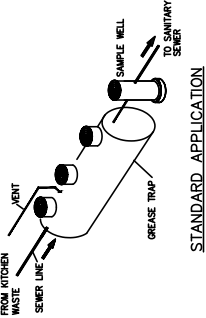
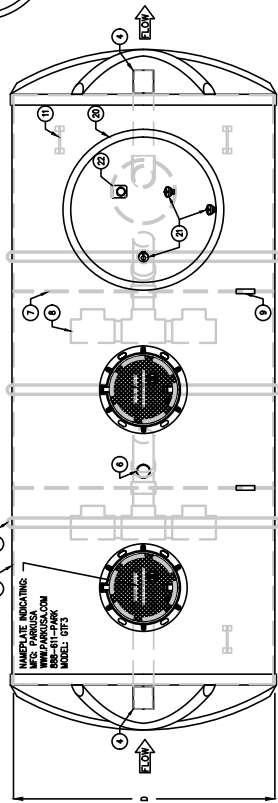
MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED OF DUCTILE IRON CONFORMING TO AASHTO M 198. MANHOLE SHALL BE 30" DIA. STAINLESS STEEL.

ENGINEERING DATA

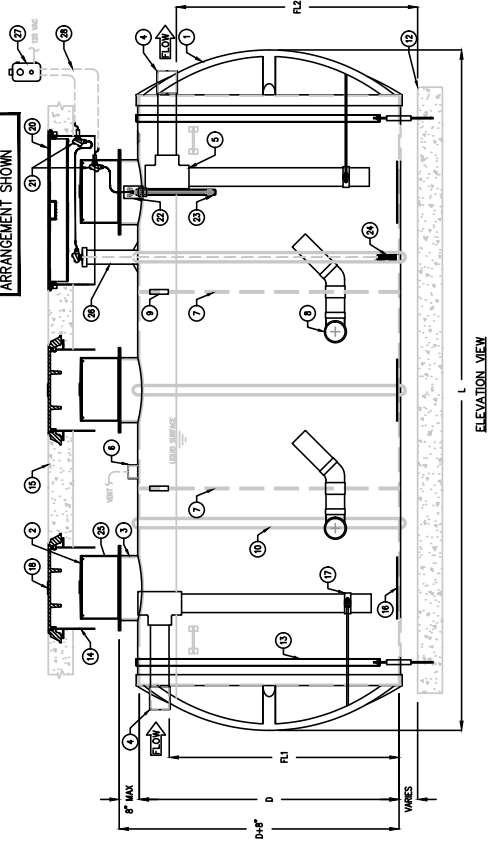
THE GREASE INTERCEPTOR IS STRUCTURALLY ENGINEERED TO CONFORM TO REGIONAL PLUMBING CODES RECOMMENDED IN MOST CITIES. CONSULT WITH PARK USA FOR EXACT INSTALLATION DIMENSIONS & SHIPPING INFORMATION.

MODEL	NOMINAL DIAMETER (IN)	OVERALL LENGTH (FT)	INLET DIAMETER (IN)	OUTLET DIAMETER (IN)	MAXIMUM FLOW (GPM)
GI-F-4000	40.00	8'-0"	28.00	5'-3"	5'-0"
GI-F-5000	50.00	8'-0"	30.00	5'-3"	5'-0"
GI-F-6000	60.00	8'-0"	32.00	5'-3"	5'-0"
GI-F-8000	80.00	8'-0"	34.00	5'-3"	5'-0"
GI-F-10000	100.00	10'-0"	36.00	5'-3"	5'-0"
GI-F-12000	120.00	10'-0"	38.00	5'-3"	5'-0"
GI-F-14000	140.00	10'-0"	40.00	5'-3"	5'-0"
GI-F-16000	160.00	10'-0"	42.00	5'-3"	5'-0"
GI-F-18000	180.00	10'-0"	44.00	5'-3"	5'-0"

- ADDITIONAL SIZES AND CONFIGURATIONS AVAILABLE.
- DIMENSIONS BASED ON MINIMUM 6" PIPE SIZE.
- INSTALLATION DIMENSIONS MAY VARY SLIGHTLY, NOTIFY IF ANY C.
- DIMENSIONS BASED ON SINGLE WALL TANK, DOUBLE WALL MAY VARY.
- EXTERNAL DISHED PIPING BY OTHERS.



OPTIONAL LEAK DETECTION ARRANGEMENT SHOWN



MARK	QTY	DESCRIPTION
1	1	REINFORCED FIBERGLASS GREASE INTERCEPTOR
2	3	MANHOLE COVER
3	3	MANHOLE WALKWAY COVER
4	3	FIBERGLASS MANHOLE EXTENSION
5	2	PVC PIPE COUPLING
6	2	INTERIOR PVC PIPING & CLEANOUT
7	2	INTERIOR BARGE
8	2	PVC DOUBLE TEE MANHOLE
9	2	LEAK DETECTION SENSORS (AS REQ'D)
10	1	STRUCTURAL SUPPORT RIB (AS REQ'D)
11	4	REINFORCING CONCRETE BALLAST
12	1	LOGS OR INTEGRATED PAD (AS REQ'D)
13	1	TANK ANCHOR STRAP (AS REQ'D)
14	3	CAST-IN MANHOLE W/ EXTENSION & CONCRETE WALKWAY (BY OTHERS)
15	3	CONCRETE WALKWAY (BY OTHERS)
16	3	PIPE SUPPORT BRACKET
17	2	MANHOLE INDICATING
18	3	MANHOLE COVER
19	1	NOT USED
20	1	HOPE BOLT-DOWN DRAG-OFF WATER TIGHT RING & COVER (OPTIONAL)
21	3	REINFORCING CONCRETE BALLAST
22	3	REINFORCING CONCRETE BALLAST
23	1	HOPE BOLT-DOWN DRAG-OFF WATER TIGHT RING & COVER (OPTIONAL)
24	1	LEAK DETECTION SENSOR IN TANK
25	3	LEAK DETECTION SENSOR IN TANK
26	1	MANHOLE ACCESS MANHOLE EXTENSION
27	1	CONTROL PANEL W/ ALARM & VISUAL ALARM FOR SENSORS (OPTIONAL)
28	2	WALKWAY COUPLER ROUTED TO CONTROL PANEL (BY OTHERS)

06-CAB
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REV	DATE	BY	DESCRIPTION
A			

PROJECT:
CUSTOMER: S/N #
ENGINEER: ORDER #
DATE: LOCATION:

PARK INC
www.parkusa.com 888-611-PARK
GREASE INTERCEPTOR
(BELOW GRADE) MODEL GI-F3-AG 4,000 THRU 14,000
DWG. NO.
DATE 06/2019
REV.
A

GREASE INTERCEPTOR SPECIFICATIONS - MODEL GTS

A. GENERAL:

1. A GREASE INTERCEPTOR SHALL BE PROVIDED IN INSTALLED AS INDICATED ON PLANS. SYSTEM SHALL BE PARKUSA GREASETRAPPER™ MODEL GTS [XXX] 888-611-PARK WWW.PARKUSA.COM OR EQUAL. THE SYSTEM SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
2. GREASE INTERCEPTOR DESIGN SHALL CONFORM TO CRITERIA SET FORTH BY THE INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS (IAPMO), UPC, LISTED (UNIFORM PLUMBING CODE), ASTM C1813-07, EPA, AND ALL OTHER GOVERNING STATE AND LOCAL CODE REQUIREMENTS.
3. THE GREASE INTERCEPTOR SHALL BE PROVIDED WITH INSTALLATION, OPERATION & MAINTENANCE MANUALS THAT CONTAIN CLEAR AND CONCISE DESCRIPTIONS.
4. CONTRACTOR SHALL SUBMITTED REQUIRED COPIES OF MANUFACTURER'S EQUIPMENT SPECIFICATION FOR ENGINEER'S REVIEW. SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING:
 - A. DETAILED MANUFACTURER'S DATA INCLUDING
 - B. INSTALLATION PLAN/ELEVATION DRAWINGS ALL CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER.
 - C. COATING SPECIFICATIONS
5. THE CONTRACTOR AND A MANUFACTURER'S REPRESENTATIVE SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION AND DELIVERY TO INSURE THAT ADEQUATE ACCESS AND CLEARANCES ARE AVAILABLE.

B. MATERIALS:

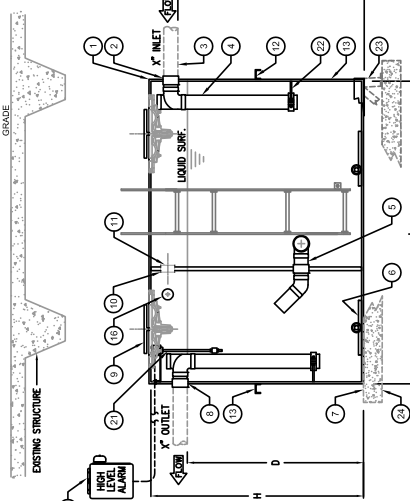
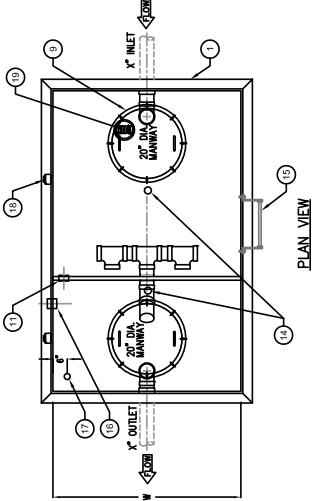
1. THE INTERCEPTOR SHALL BE OF THE SIZE AND CONFIGURATION AS SHOWN ON THE PLANS AS MANUFACTURED BY PARKUSA OR EQUAL. TANK SHALL BE CONSTRUCTED IN ACCORDANCE WITH AMERICAN WELDING SOCIETY SPECIFICATIONS, WITH STRUCTURAL DESIGN IN ACCORDANCE WITH ASCE LATEST ISSUE.
2. THE INTERCEPTOR SHALL BE DIVIDED WITH A Baffle WITH TWO COMPARTMENTS. A METAL NAMEPLATE GIVING THE NAME OF FABRICATOR, DATE OF FABRICATION AND SERIAL NUMBER OF THE TANK SHALL BE PERMANENTLY AFFIXED TO THE TANK. THE MANUFACTURER OF THE TANK SHALL HAVE NO LESS THAN FIVE (5) YEARS EXPERIENCE BUILDING 3,500 GALLON OR LARGER GREASE INTERCEPTORS. A LIST OF INSTALLATIONS OF SUCH TANKS SHALL BE FURNISHED AS REQUIRED BY THE ENGINEER. THE TANKS SHALL BE CONSTRUCTED ENTIRELY OF NEW MATERIALS TO ASSURE AGAINST THE POSSIBILITY OF CONTAMINATION FROM PREVIOUS USAGE.
3. THE GREASE INTERCEPTOR SHALL HAVE ADEQUATE MANHOLE ACCESS COVERS TO PERMIT ACCESS FOR CLEANING ALL AREAS OF THE INTERCEPTOR. EACH MANHOLE ACCESS SHALL BE MINIMUM 20 DIAMETER CLEAR OPENING AND BE WATER-TIGHT SEALED WITH A NEOPRENE GASKET & QUICK RELEASE TYPE FASTENERS.
4. THE TANK SHALL INCLUDE THE FOLLOWING, AND SUCH OTHER ITEMS DETAILED ON THE PLANS.
 - A. TOP - 3/16" ASTM A686 STAINLESS STEEL PLATE MINIMUM.
 - B. SHELL OR SIDES - 3/16" ASTM A686 STAINLESS STEEL PLATE MINIMUM.
 - C. BOTTOM - 1/4" ASTM A686 STAINLESS STEEL PLATE MINIMUM.
 - D. 150 PSI ANSI FORGED 304 STAINLESS STEEL HALF COUPLINGS (AS REQUIRED FOR TANK CONNECTIONS).
 - E. MINIMUM 1/2" MANWAY COVER, FLANGE, & FASTENERS SHALL BE CONSTRUCTED OF TYPE 304 STAINLESS STEEL.
 - F. INTERNAL MANIFOLD PIPING CONSISTING OF MINIMUM 6" SDR 35 PVC.

C. PROTECTIVE COATINGS:

1. THE MANUFACTURER SHALL BE A CERTIFIED APPLICATOR OF ENGINEERED COATINGS.
2. APPLICATION PROCEDURES SHALL CONFORM TO THE STANDARDS OF CRAFTSMANSHIP IN THE STEEL STRUCTURES PAINTING MANUAL, VOLUME 1, GOOD PRACTICE EDITIONS. THESE TECHNIQUES INCLUDE, BUT ARE NOT LIMITED TO, MULTIPLE PASSES OF THE SPRAY GUN, WITH EACH PASS OVERLAPPED 50% AND CROSS HATCHING SUCCESSIVE COATS OF PAINT.
3. MATERIALS SHALL BE THINNED ONLY WITH THE MANUFACTURER'S RECOMMENDED THINNERS, AND SHALL BE THINNED ONLY THE AMOUNT REQUIRED TO ADJUST THE VISCOSITY FOR TEMPERATURE VARIATIONS, PROPER ATOMIZATION AND FLOW-OUT.
 - A. INTERIOR SURFACES - FACTORY MILL FINISH
 - B. EXTERIOR SURFACES
 - I. SHARP ANCHOR PREPARATION: PER SSPC-SP10 NEAR WHITE BLAST CLEAN WITH 1.5-2.0 MIL / 50 MICRON DENSE, SHARP ANCHOR PROFILE FREE PEENING AS MEASURED BY ASTM D 4417.
 - II. EPOXY FINISH: CARBOURNE - CARBOURNE 880 EPOXY PRIMER @ 6 MIL DFT WITH CARBOURNE 34 HG EPOXY FINISH @ 3 MIL DFT.
 - III. BOTTOM OF TANK COATINGS: CARBOURNE - BITUMASTIC 300M HIGH BUILD COAT THE EPOXY WITH 20 MIL DRY FILM THICKNESS.

D. INSTALLATION:

1. THE GREASE INTERCEPTOR SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND ACCORDING TO PLANS AND SPECIFICATIONS. THE MANUFACTURER SHALL HAVE REPRESENTATION DURING THE SETTING OF THE INTERCEPTOR.
2. PIPE AND SHALL BE INSTALLED AS SHOWN ON THE DRAWINGS AND PER MANUFACTURER'S RECOMMENDATIONS. THE ALL INTERCEPTOR INLET/OUTLET/VENT PIPING SHALL BE INSTALLED IN ACCORDANCE TO MANUFACTURER'S RECOMMENDATIONS AND PROJECT SPECIFICATIONS.
3. INTERCEPTOR SHALL BE FILLED WITH CLEAN WATER PRIOR TO START-UP OF SYSTEM AND SECURE MANWAY COVER PRIOR TO OPERATING TANK. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR TESTING AND START-UP.



MODEL	TANK SIZE	L	W	H	D	E	EMPTY WEIGHT	GREASE CAPACITY
GTS-500	500 GAL	6'-4"	3'-6"	4'-0"	3'-0"	3'-0"	1,400	4,200
GTS-1000	1000 GAL	9'-0"	5'-0"	4'-0"	3'-0"	3'-0"	2,100	6,300
GTS-1500	1500 GAL	10'-4"	5'-0"	5'-0"	4'-0"	4'-0"	2,500	7,500
GTS-2000	2000 GAL	11'-4"	5'-0"	6'-0"	5'-0"	5'-0"	3,300	9,900
GTS-3000	3000 GAL	13'-2"	6'-0"	6'-0"	5'-0"	5'-0"	3,500	10,500
GTS-4000	4000 GAL	14'-4"	6'-0"	6'-0"	5'-0"	5'-0"	4,200	12,600
GTS-5000	5000 GAL	17'-0"	7'-0"	6'-0"	5'-0"	5'-0"	5,100	15,300
GTS-6000	6000 GAL	17'-0"	7'-0"	6'-0"	5'-0"	5'-0"	5,100	15,300
GTS-7000	7000 GAL	20'-0"	10'-0"	6'-0"	4'-7"	4'-7"	6,900	20,700
GTS-8000	8000 GAL	20'-0"	10'-0"	6'-0"	4'-7"	4'-7"	6,900	20,700

SYMBOL	DESCRIPTION	THE FOLLOWING SIZE REMAINS CONSTANT TO THE DISTRIBUTION MAIN - UNLESS OTHERWISE SPECIFIED		REMARKS	SPECIFICATION
		CM	HW		
GTS-XXX	GREASE INTERCEPTOR	---	---	X"	GREASE INTERCEPTOR PARK MODEL GTS-XXX GREASE INTERCEPTOR (WWW.PARKUSA.COM). 3X3 GAL LIQUID CAPACITY, 12X3 GAL SOLID CAPACITY. EXTERIOR EPOXY FINISH, INLET/OUTLET/VENT PIPE CONNECTIONS, EXTENSIONS W/ (2) 20" DIA GAS-TIGHT COVERS, EXTERIOR OSHA LADDER.

NOTE: OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION

MARK	QTY	DESCRIPTION	KEYED NOTES
1	1	PRE-FABRICATED STAINLESS STEEL TANK ASSEMBLY	
2	1	3" FPT INLET CONNECTION	
3	1	TYPICAL PIPING BY OTHERS	
4	2	1/2" SCH 40 PVC RING TOP	
5	2	6" SCH 40 PVC MANIFOLD PIPING	
6	2	STIKER PLATES (TYP-2)	
7	1	FOR FLOOR MOUNTING, APPLY 1/8" BITUMASTIC & COVER WITH ROOFING FELT	
8	1	3" FPT OUTLET CONNECTION	
9	2	20" DIA. MANWAY OPENING W/ BOLT DOWN, WATER-TIGHT ACCESS COVER (TYP-2)	
10	1	BAFFLE	
11	1	3" BAFFLE VENT SLEEVE	
12	2	STRUCTURAL REINFORCEMENT (AS REQUIRED)	
13	1	EXTERIOR OF INTERCEPTOR LINED WITH CORROSION RESISTANT COATING	
14	2	3" FILL COUPLING FOR OPTIONAL WASH SYSTEM	
15	1	2X FERRICO RUBBER BOOT CONNECTOR	
16	2	OSHA APPROVED LADDER	
17	2	3" FPT VENT CONNECTION	
18	0	2" DRAIN W/ ALUR (TYP)	
19	2	NAMEPLATE INDICATING MFG, PARKUSA, WWW.PARKUSA.COM, MODEL: GTS-XXX, DATE MANUFACTURED	
20	1	HIGH GREASE ALARM PANEL MOUNTED AT REMOTE LOCATION	
21	1	GREASE SENSOR	
22	2	GALVANIZED RISER SUPPORT (TYPICAL)	
23	1	FOR ELEVATED MOUNTING, STRUCTURAL STAND TO BE PROVIDED BY OTHERS	
24	1	6" THK CONCRETE EQUIPMENT PAD (BY CONTRACTOR)	

REV	DATE	BY DESCRIPTION
A		

PROJECT: _____
 CUSTOMER: _____ S/N # _____
 ORDER # _____ PROJ # _____
 DATE: _____ LOCATION: _____

PARK
 www.parkusa.com 888-611-PARK
GREASE INTERCEPTOR
 MODEL GTS - 500 THRU 8000 GALLONS
 ENGINEER: _____
 DATE: 06/2019
 GTS-AG
 REV. A



Grease Interceptor Specifications – Model GTRSS

A: General:

- Grease Interceptor shall be provided in installed as indicated on plans. System shall be ParkUSA GreaseTrooper™ Model GTRS (XXX) 888-611-PARK www.ParkUSA.com, or equal. The system shall be installed in strict accordance with the manufacturer's recommendations.
- Grease Interceptor design shall conform to criteria set forth by the International Association of Plumbing and Mechanical Officials (IAPMO), UPC, Listed (Uniform Plumbing Code), ASTM C1615-07, EPA, and all other governing state and local code requirements.
- The Grease Interceptor shall be provided with installation, operation & maintenance manuals that contain clear and concise descriptions.
- Contractor shall submit required copies of manufacturer's equipment specification for engineer's review. Shop drawings shall include the following:
 - Detailed manufacturer's data including
 - Installation plan/elevation drawings all certified by a registered professional engineer.
 - Coatings specifications
- The contractor and a manufacturer's representative shall field verify all dimensions prior to fabrication and delivery to insure that adequate access and clearances are available.

B: Materials:

- The Interceptor shall be of the size and configuration as shown on the plans as manufactured by ParkUSA or GreaseTrooper in strict accordance with American Welding Society Specifications, with structural design in accordance with ASCE latest issue.
- The Interceptor shall be divided with a baffle with two compartments. A metal nameplate giving the name of fabricator, date of fabrication and serial number of the tank shall be permanently affixed to the tank. The nameplate shall be of the same material as the tank. The nameplate shall be fabricated by the engineer. The tanks shall be constructed entirely of new materials to assure against the possibility of contamination from previous usage.
- The grease Interceptor shall have adequate manhole access covers to permit access for cleaning all areas of the Interceptor. Each manhole access shall be minimum 20" diameter clear opening and be water-tight secured with a respring gasket & quick release type fasteners.
- The tank shall include the following and such other items detailed on the plans.
 - Ends – 3/16" ASTM A466 stainless steel plate minimum.
 - Shell or sides – 3/16" ASTM A466 stainless steel plate minimum.
 - 150 PSI ANSI forged 304 stainless steel half couplings (as required for tank connections).
 - Internal manhole access covers shall be constructed of Type 304 stainless steel.
 - Internal manifold piping consisting of minimum 6" SDR 35 PVC.

C: Protective Coatings:

- The manufacturer shall be a Certified Applicator of Engineered Coatings.
- Application procedures shall conform to the standards of Craftsmanship in the Steel Structures Painting Manual, published by the American Institute of Steel Construction, Inc. and shall include the following:
 - Surfaces shall be prepared to a minimum 80% and cross hatching successive coats of paint.
 - Materials shall be thinned only with the manufacturer's recommended thinners, and shall be thinned only the amount required adjust the viscosity for temperature variations, proper atomization and flow-out.
- Interior Surfaces – Factory Mill Finish
 - Exterior Surfaces
 - Surface Preparation: Per SSPC-SP10 near white blast clean, with 1.5-2.0 mil / 50 micron dense, sharp anchor profile free peening, as measured by ASTM D 4417.
 - Primer/Finish Coat: Carboline – Carbogard 890 epoxy primer @ 6 mil DFT with Carboline 34 HG epoxy finish @ 3 mil DFT.
 - Bottom of Tank Coating: Carboline – Blumastic 300M High Build Cool Top Epoxy with 20 mil dry film thickness.
- Coatings inspection:
 - Film thickness shall be checked with a nondestructive, magnetic pull-off gauge such as a Microtest Model DTG-100 or electronic thickness gauge. The national Bureau of standards certified thickness calibration shall be used. The coating shall be tested at a minimum of 10 locations per tank. The coating shall be tested on holiday holiday Test: Interier surfaces shall be holiday tested using a 67 1/2 volt DC, 80,000 ohm Tinker-Razor wet sponge holiday detector, or equal.
 - Upon completion, the Interceptor shall be inspected and certified by a NACE Certified Coating Inspector.

C: Installation:

- The grease Interceptor shall be installed in strict accordance with the manufacturer's recommendations and according to plans and specifications. The manufacturer shall have representation during the setting procedure to insure proper installation.
- Pipe and install the Interceptor as shown on the drawings and per manufacturer's recommendations. The Interceptor shall be installed on an equipment (nonseeping) pad.
- All equipment piping shall be installed in accordance to manufacturer's recommendations and Interceptor shall be filled with clean water prior to start-up of system and secure manway cover prior to operating tank. Follow manufacturer's recommendations for testing and start-up.

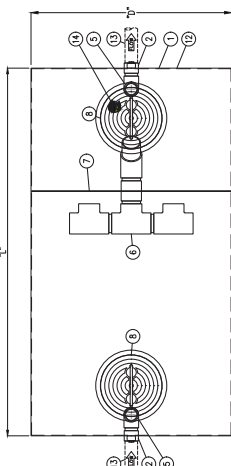
KEYED NOTES	
MARK	DESCRIPTION
1	1. PREFABRICATED STAINLESS STEEL TANK ASSEMBLY
2	2. 2" FPT CONNECTION
3	3. 1" FPT VENT CONNECTION
4	4. 1" X" BAFFLE VENT SLEEVE
5	5. 2" X" SCH 40 PVC DOUBLE TEE MANIFOLD
6	6. 1" BAFFLE
7	7. 20" DIA MANWAY w/ GAS-TIGHT, FLOOD RATED ACCESS COVER
8	8. 2" MANWAY LOCKING HANDLE
9	9. 2" MANWAY EXTENSION, HEIGHT AS REQ'D
10	10. 2" FPT DRAIN w/ PLUG
11	11. EXTERIOR OF INTERCEPTOR LINED WITH CORROSION RESISTANT COATING
12	12. TYPICAL PIPING (BY OTHERS)
13	13. NAMEPLATE INDICATING: MFG: ParkUSA 888-611-PARK www.ParkUSA.com MATERIALS: DATE MANUFACTURED
14	14. 1



PROJECT: . . .
CUSTOMER: . . .
ENGINEER: . . .
ORDER # . . .
PROJ # . . .
DATE: . . .



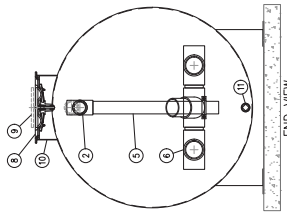
FABRICATED GREASE INTERCEPTOR
MODEL GTRS – 750 THRU 2,500 GALLONS
REV. . .
DATE 2018
GTRS-BG



PLAN VIEW



ELEVATION

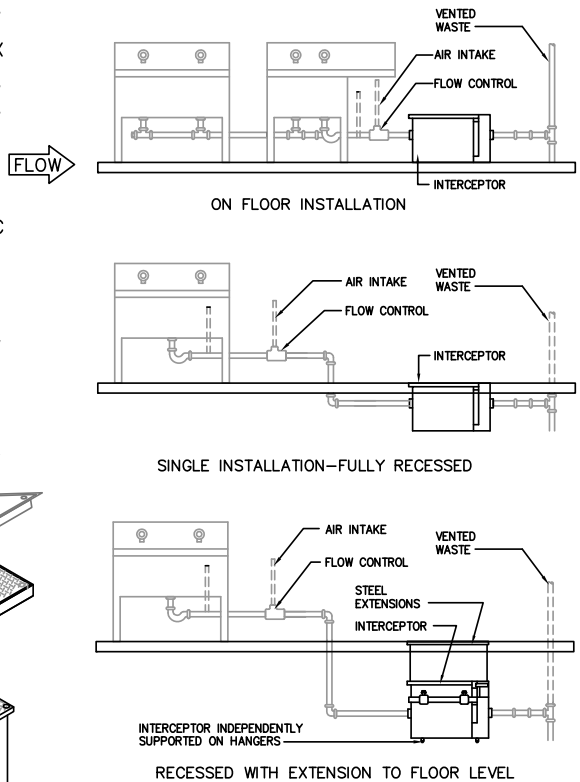
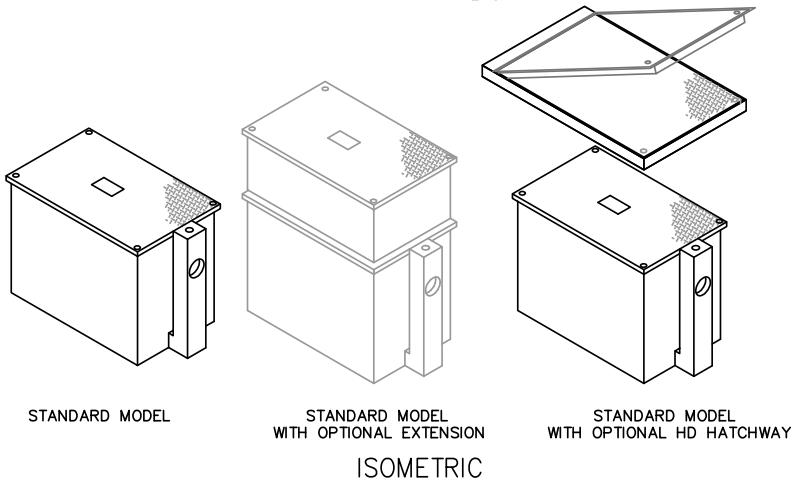
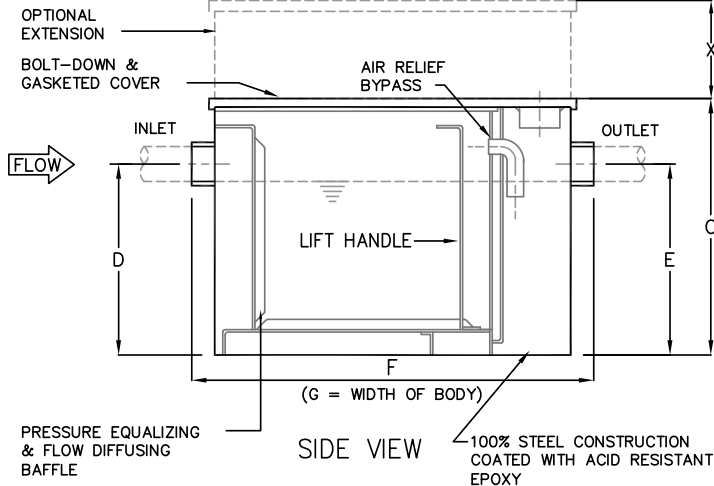


END VIEW

MODEL NO.	CAPACITY (USGAL)	GREASE CAP (LBS)	EMPTY WT (LBS)	LENGTH	DIAMETER D.	INLET FL2	OUTLET FL2
GTRSS-750	750	1,700	1,700	6'-0"	6'-0"	5'-3"	5'-0"
GTRSS-1000	1,000	2,300	2,100	8'-0"	6'-0"	5'-3"	5'-0"
GTRSS-1500	1,500	2,900	2,600	8'-0"	6'-0"	5'-3"	5'-0"
GTRSS-2000	2,000	3,500	3,300	11'-0"	6'-0"	5'-3"	5'-0"
GTRSS-2500	2,500	4,600	3,700	13'-0"	6'-0"	5'-3"	5'-0"

SYMBOL	DESCRIPTION	PLUMBING FIXTURE SCHEDULE				PROVIDE THE FOLLOWING SIZE BRANCH CONNECTIONS UNLESS OTHERWISE SPECIFIED				SPECIFICATION
		CW	HW	SAN	VENT	REMARKS				
GTRS-XXX	GREASE INTERCEPTOR	--	--	X"	X"					GREASE INTERCEPTOR PARK MODEL GTRS-XXX GREASE INTERCEPTOR (WWW.PARKUSA.COM). XXXX GAL LIQUID CAPACITY. FABRICATED STAINLESS STEEL CONSTRUCTION w/ EXTERIOR EPOXY LINING. INLET/OUTLET/VENT PHE CONNECTIONS. EXTENSIONS w/ (2) 20" DIA GAS-TIGHT COVERS, EXTERIOR OSHA LADDER.

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION



Typical Installations



DIMENSIONAL DATA								
MODEL	FLOW RATE G.P.M.	GREASE CAPACITY LBS.	C	D	E	F	G	INLET/OUTLET NO-HUB CONN.
MGT-4	04	8	10"	7- 1/4"	7-1/4"	15-7/8"	9-7/8"	2"
MGT-7	07	14	11-1/4"	8-1/8"	8-1/8"	17-1/4"	11-7/8"	2"
MGT-10	10	20	11-3/4"	8-1/4"	8-1/4"	19-1/4"	14"	2"
MGT-15	15	30	13-3/8"	9-3/8"	9-3/8"	21-1/4"	16-3/4"	2"
MGT-20	20	40	15"	11-3/4"	11-3/4"	24-1/8"	17-1/4"	3"
MGT-25	25	50	17"	12-1/2"	12-1/2"	26-1/8"	19-7/8"	3"
MGT-35	35	70	18-3/4"	14-1/4"	14-1/4"	28"	22-1/2"	4"
MGT-50	50	100	21-1/2"	16"	16"	29-7/8"	24-1/2"	4"
MGT-75	75	150	22-3/4"	18-1/2"	18-1/2"	36"	28-5/8"	4"
MGT-100	100	200	27"	23"	23"	42-3/4"	33-5/8"	4"



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General Information

Grease interceptors are used in non-private establishments to remove excessive amounts of grease that may interfere with the proper drainage and treatment of waste water. Local plumbing codes generally require the installation of a grease interceptor where there is a sufficient amount of waste material. Typical applications include commercial and institutional kitchens and food processing plants. The waste discharge from these facilities usually contain high organic loads, including grease, oils, fats, and dissolved and suspended food particles, as well as detergents.

The function of the grease interceptor is to intercept the liquid greasy waste and/or garbage and retain it for a sufficient amount of time which allows for cool-down of the greasy liquid, thus promoting separation and coagulation of the grease from the water. This detention time also allows for separation of the garbage from the wastewater.

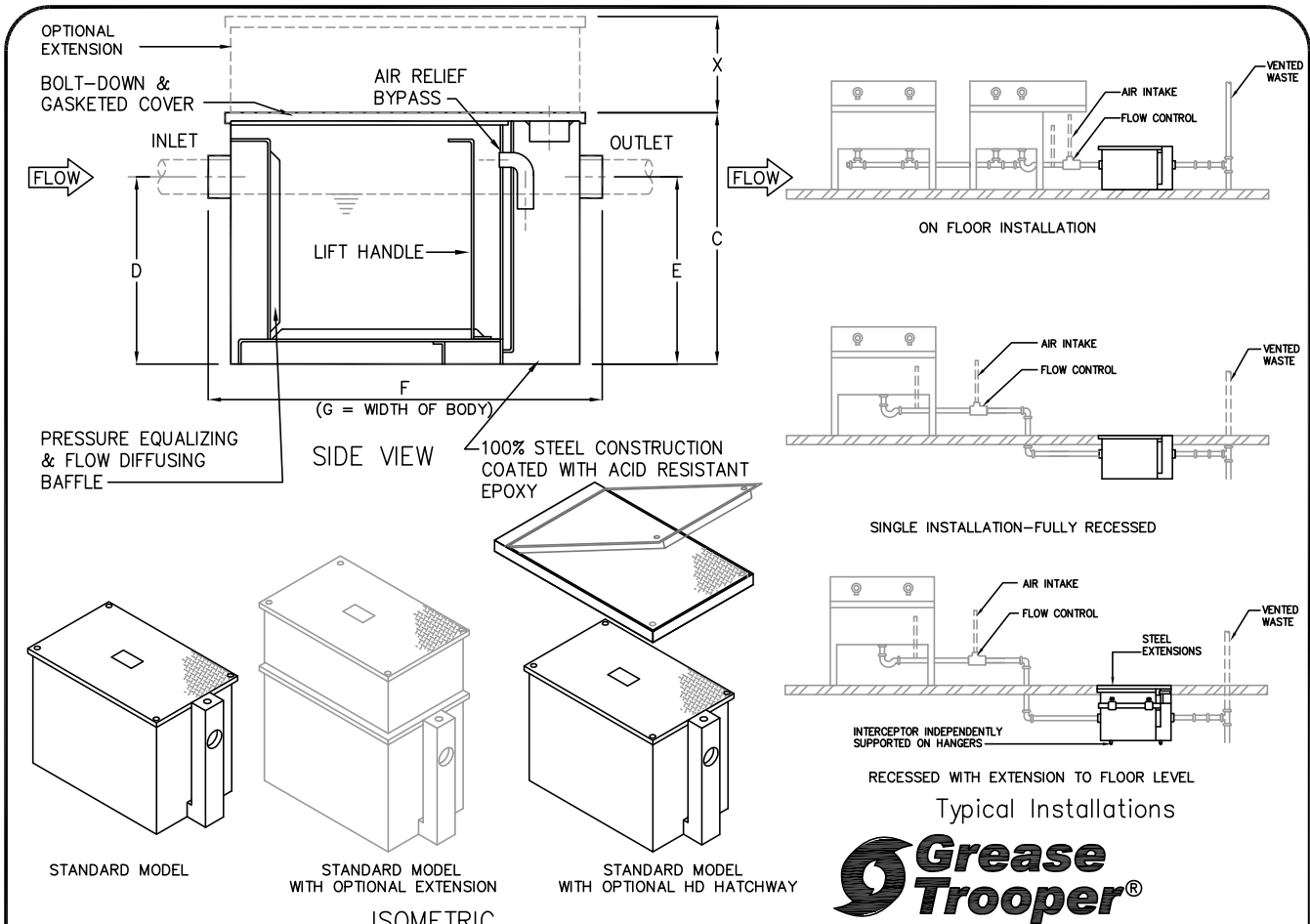
PROJECT: _____
 CUSTOMER: _____
 ENGINEER: _____
 ORDER #: _____
 PROJ #: _____
 DATE: _____

888.611.PARK
www.parkusa.com

DESIGN FOR WATER

MECHANICAL GREASE INTERCEPTOR
MODEL MGT - 8 THRU 200 LBS CAPACITY

MGT-1	PM	DRN	CHK	DWG. NO. MGT-1	REV. A
	DATE	2018			



Typical Installations
Grease Trooper[®]

DIMENSIONAL DATA										
MODEL	FLOW RATE GPM	GREASE CAPACITY LBS	VOLUME GAL	C	D	E	F	G	EMPTY WT LBS	INLET/OUTLET NO-HUB CONN.
MGTL-150	75	150	65	22-3/4"	18-1/2"	18-1/2"	36"	28-5/8"	315	3"
MGTL-200	100	200	110	27"	23"	23"	42-3/4"	33-5/8"	410	3"
MGTL-250	125	250	150	30-1/8"	24-1/2"	24-1/2"	49-1/4"	40"	750	3"
MGTL-300	150	300	195	30-3/4"	25-1/4"	25-1/4"	56"	41-5/8"	860	4"
MGTL-400	200	400	270	35-1/2"	29-7/8"	29-7/8"	61"	43-5/8"	1020	4"
MGTL-500	250	500	465	41"	36"	36"	71"	51-5/8"	1390	6"
MGTL-600	300	600	665	46-1/4"	39-5/8"	39-5/8"	80"	58-5/8"	1770	6"
MGTL-700	350	700	865	50-1/2"	43-7/8"	43-7/8"	87"	63-5/8"	2100	6"
MGTL-800	400	800	1095	54-1/4"	47-5/8"	47-5/8"	94"	67"	2450	6"
MGTL-900	450	900	1280	55-1/4"	48-5/8"	48-5/8"	100"	72"	2700	6"
MGTL-1000	500	1000	1440	57-1/4"	51-5/8"	51-5/8"	104"	74"	2860	6"



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General Information

Grease interceptors are used in non-private establishments to remove excessive amounts of grease that may interfere with the proper drainage and treatment of waste water. Local plumbing codes generally require the installation of a grease interceptor where there is a sufficient amount of waste material. Typical applications include commercial and institutional kitchens and food processing plants. The waste discharge from these facilities usually contain high organic loads, including grease, oils, fats, and dissolved and suspended food particles, as well as detergents.

The function of the grease interceptor is to intercept the liquid greasy waste and/or garbage and retain it for a sufficient amount of time which allows for cool-down of the greasy liquid, thus promoting separation and coagulation of the grease from the water. This detention time also allows for separation of the garbage from the wastewater.

PROJECT:					
CUSTOMER:					
ENGINEER:					
ORDER #:					
PROJ #:					
DATE:					
MECHANICAL GREASE INTERCEPTOR MODEL MGTL - 150 THRU 1000 LBS CAPACITY					
PM	DRN	CHK	DWG. NO.		REV.
			MGTL-1		A
DATE			2018		



Features

- Sizes from 500 gallons to 20,000 gallons
- Uniform Plumbing Code Listed (UPC)
- High-strength precast concrete, steel, or fiberglass construction
- Easy maintenance
- Choices of interior protective liners
- Remote maintenance alarm

Grease Interceptor Systems

The GreaseTrooper is a gravity grease interceptor (GGI) designed to reduce the amount of FOG (fats, oils, and greases) in wastewater. Grease interceptors are used in establishments to remove excessive amounts of grease that may interfere with the proper drainage and treatment of wastewater. The accumulation of FOG can escalate into blockages and sanitary sewer overflows (SSO) that disrupt wastewater treatment operations and increase costs.

Most local plumbing codes prohibit any industrial user from discharging FOG over 100 mg/l into the public sewer system.

Typical applications include commercial wastewater, institutional kitchens, and food processing plants. The waste discharge from these facilities usually contains high-temperature water, high organic loads, FOG, suspended food particles, and detergents.



LISTED



WW | GREASETROOPER
Standard



System Components

GreaseTrooper® may include the following:

- Precast concrete, fiberglass, or stainless steel construction
- Interior liners include epoxy, high density polyethylene, and stainless steel
- Maintenance alarm system
- Traffic duty and gas-tight access covers
- Free-standing and direct-bury configurations
- Sample well for sampling effluent

How it Works

Gravity Grease Interceptors (GGI), also commonly known as a grease trap, work on the buoyancy principle. Animal fats and vegetable oils (grease) are 10 to 15 percent less dense than water and will float on top of water. When wastewater enters a grease interceptor, the velocity is reduced enough that wastewater is given time to cool and separate into 3 layers. Grease rises to the top inside the interceptor and is trapped using a system of baffles. Solids settle at the bottom, and the separated clear water escapes under an outlet baffle.

Grease interceptors can also have strainers for collecting solid debris, which reduce the amount of solids that settle at the bottom of the interceptor. Over time, solid and grease build-up will accumulate in the grease interceptor. A routine cleaning schedule will ensure maximum performance of each interceptor.

Visit greasetrooper.parkusa.com for more information and design assistance including sizing and specifications.

To request a quote or catalog, visit request.parkusa.com.



APPLICATIONS



Restaurants



Industrial
Kitchens



Commercial



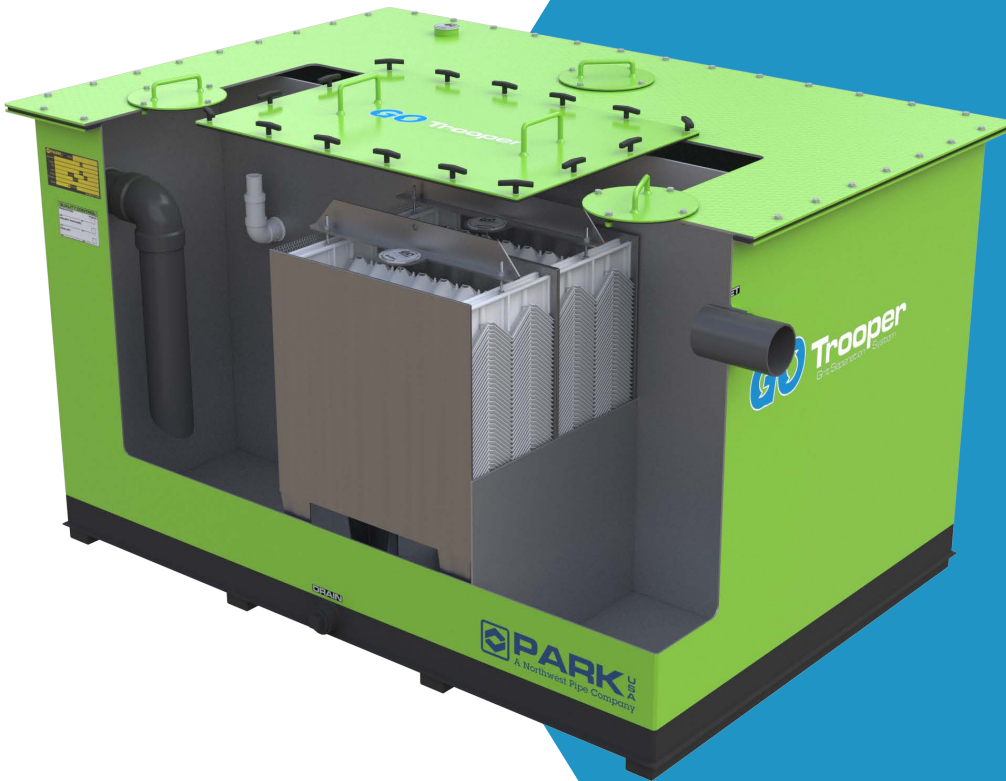
Hotels



Multi Story
Family Home



Medical Facilities



PARK USA
A Northwest Pipe Company

ENGINEERING FACTS

GENERAL INFORMATION

With the establishment of Phase I & II Stormwater Regulations by the EPA and in keeping with city and county NPDES permits, it is unlawful to discharge cosmetic wash water into the municipal separate stormwater system MS4. Cosmetic wash water discharges typically refer to any water that has been applied under pressure, from a wand, nozzle, or other portable applicator, to a fixed surface, whether indoor or outdoor, whether vertical or horizontal, for the purpose of removing dirt, oil, grease, animal feces and other stains, whether conducted by a contractor for profit, by employees of a company, a city, or any other entity for its operations and maintenance purposes, or by a person on that person's property.

Any discharge of cosmetic wash water "trucked-in" must be "trucked-out" to be discharged at a permitted discharge site unless the facility has a permitted grit-oil interceptor connected to the sanitary sewer system.

GRITTROOPER MODELS

Discharge is allowed to a sanitary sewer discharge point on the property only if the discharge will flow through a stationary system designed to remove grit, oil and grease. A sample well or test well should be installed on the effluent side of the interceptor before entering the sanitary sewer system. Typically, cosmetic wash water may not be discharged through a restaurant grease interceptor (or grease trap).

ParkUSA's GoTrooper Grit-Oil Interceptor and Sample Well is specific to this commercial application and complies with all relevant codes.



ParkUSA GOT



ParkUSA GOS



ParkUSA GO

With the establishment of Phase I & II Stormwater Regulations by the EPA and in keeping with city and county NPDES permits, it is unlawful to discharge cosmetic wash water into the municipal separate stormwater system MS4.

FEATURES

- Pre-Engineered from 500 - 15,000 Gallons
- Precast Concrete, Polyethylene, Fiberglass or Steel Construction
- Above or Below Grade Installation
- Pedestrian or Traffic Rated
- Remote Maintenance Alarm
- Interior Liners Available
- Meets all Building Codes

MODELS

Current Grit-Oil Interceptor models are:

The ParkUSA GO Series Interceptor is manufactured of Class II 4500 PSI precast concrete. Pre-casting the concrete shell insures that all units achieve structural and physical uniformity. The units are structurally engineered for H-20 truck loading and can be buried without any need for any other structural protection. The unit is of monolithic construction at bottom and walls to insure against joint leakage.

The ParkUSA GOS Series Interceptor is a steel unit and is recommended for application where the grit-oil interceptor is installed in a freestanding position, i.e. basement or on a slab.

The ParkUSA GOF Series Interceptor is manufactured fiberglass or plastic and is used where lightweight construction is required.

SYSTEM COMPONENTS

The ParkUSA GoTrooper Grit-Oil Interceptor includes the following components:

- Precast Concrete, Steel or Composite Separator Basin
- Access covers or hatchways
- Access ladders
- Safety hatch nets
- High-level alarm and control panel

OPERATION

The function of the Grit-Oil Interceptor is to intercept cosmetic wash water and retain it for periodic removal. The unit can be designed to function as a gravity flow or pumped-driven system. The wastewater flows into an inlet chamber, passes through a baffle and oleophilic coalescing plate pack to separate oil and solids. The discharging effluent comprises the clearer water underneath the floating oils.

Depending on the application, the Grit-Oil interceptor may be installed below grade or above ground. The interceptor is typically constructed of precast concrete, steel, or composite material providing years of continuous service. The interceptor is divided into several compartments where wash water discharge oil will coagulate and float to the surface, and sand (grit) will sink to the bottom.

DESIGN CONSIDERATIONS

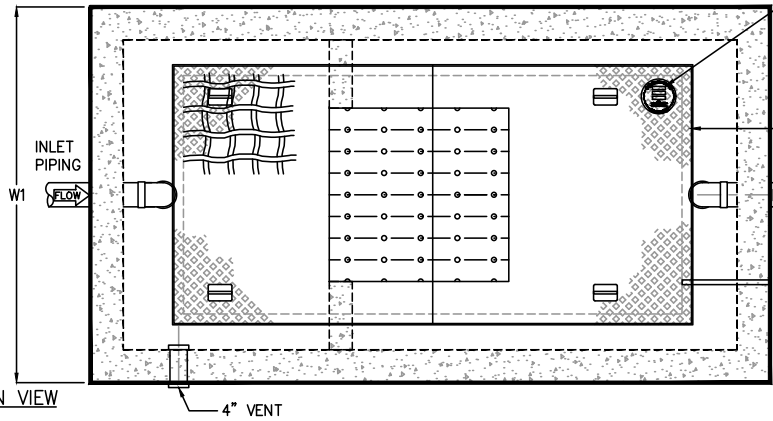
One of the most important features for the successful operation of the GoTrooper Grit-Oil Interceptor is the maintenance program. Regardless of the size or design, an interceptor is only as good as its maintenance program. For this reason, most plumbing codes require the interceptor be installed and located so that it will be easily accessible for inspection, cleaning and removal of intercepted waste products.

SIZING

There are many variables that determine the Best Management Practice for sizing. The most important is the type of flow discharging into the system. The discharge type and application determines the sizing method and retention time. Choosing of model is based on flow rate, this can be read directly from charts to pick the appropriate volume and model of the unit.

MAINTENANCE

The frequency of cleaning at any given installation will vary depending on use. The GoTrooper Grit-Oil Separator should be cleaned (or pumped out) routinely to prevent the escape of appreciable quantities of oil/solids. Sand/Oil discharge should be removed before accumulations effectively reduce storage capacity and detention time of the interceptor. Oil-absorbing pillows, when used, should be replaced when dark in color. The interceptor should be pumped out by a professional pumping company familiar with regulations regarding proper disposal.



NAMEPLATE INDICATING:
MFG: PARKUSA
888-611-PARK
WWW.PARKUSA.COM
MODEL: GO-1
DATE MANUFACTURED

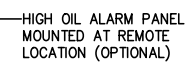
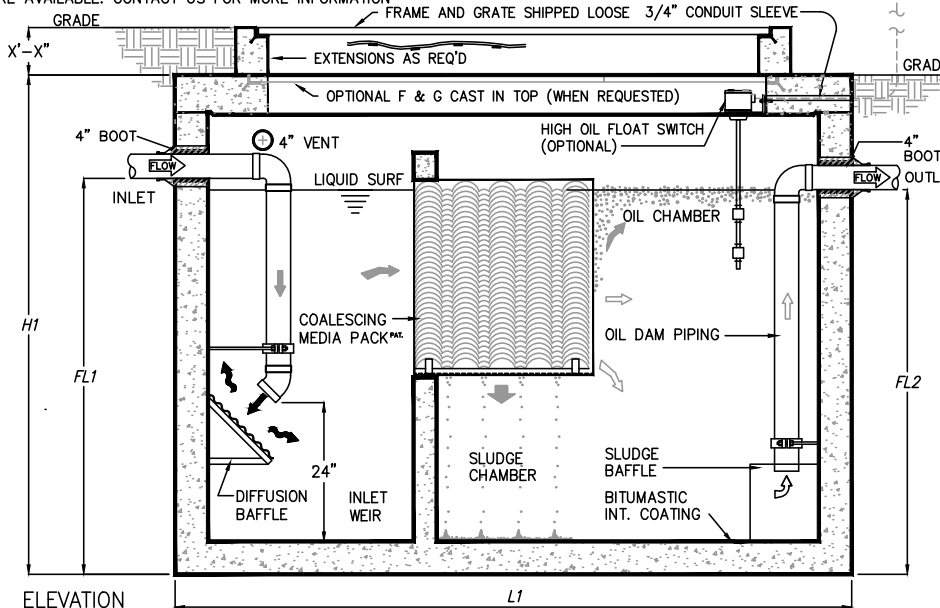
30x60 GALV. STEEL PARKway™
FRAME & COVER, RATED FOR
H20 TRAFFIC LOADING

APPLICATIONS

- PARKING GARAGE PRESSURE WASHING
- GENERAL INDUSTRY
- EQUIPMENT & TRANSPORTATION WASHDOWN FACILITIES
- CARWASHES
- FIRE STATION WASHDOWN
- SERVICE STATION FUEL DEPOTS
- MANUFACTURING FACILITY EFFLUENT WATER
- CITY MAINTENANCE WASHDOWN

SAND-OIL INTERCEPTOR SCHEDULE										
MODEL NO.	CAPACITY USgal	OIL CAP. US (GAL)	GRIT CAP. (LBS)	FLOW RATE (GPM)	EMPTY WT (LBS)	LENGTH L1	WIDTH W1	HEIGHT H1	INLET FL1	OUTLET FL2
GO-500	500	250	2950	50	9,500	7'-10"	4'-4"	4'-6"	3'-3"	3'-0"
GO-750	750	375	2950	75	9,900	7'-10"	4'-4"	6'-0"	4'-5"	4'-2"
GO-1000	1,000	500	3950	100	13,350	8'-8"	5'-0"	6'-0"	4'-9"	4'-6"
GO-1500	1,500	750	4600	150	16,050	9'-2"	5'-8"	7'-0"	5'-9"	5'-6"
GO-2000	2,000	1,000	4600	200	21,250	9'-0"	6'-0"	8'-0"	6'-9"	6'-6"

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION



GUARANTEED PERFORMANCE
A certified performance analysis utilizing a proprietary computer program will accurately model systems to ensure that their effluent qualities meet the required discharge criteria (EPA and Local Codes)

Influent oily water contains oil droplets of many different sizes. These droplets rise at different rates. Park utilizes a statistical program that divides the droplets into ranges of sizes and calculates the rise rates of each range. This calculation determines which droplets the separator can capture.

Contact our Engineering Dept. @ 888-611-PARK for a free performance evaluation.



GUARANTEED PERFORMANCE FOR CODE MAXIMUM OIL CONCENTRATION (SANITARY SEWER 400 PPM, STORM SEWER 15 PPM) © ParkUSA. ALL RIGHTS RESERVED.

Specifications

- CONCRETE:** Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
- REINFORCEMENT:** Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal.
- MATERIALS:** Access frame & cover shall be fabricated with min. 1/4" thick nonskid floor plate, bolt-down, & lifting handles. All materials to be corrosion resistant.

Engineering Data

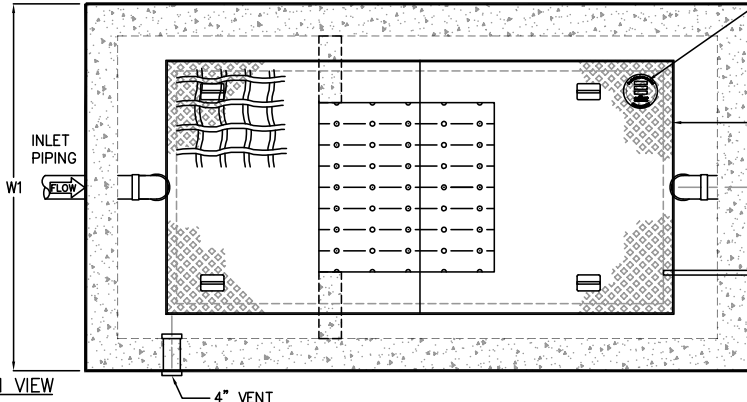
Interceptor is structurally and hydraulically engineered conforming to Uniform Plumbing Code. Nominal total liquid capacity and oil holding capacity as indicated. Recommended for flow rates of 5 to 180 GPM (consult Park for proper sizing). Manufacturer shall submit performance calculations for oil & water separation certified by a licensed professional engineer. Field excavation and preparation shall be completed prior to delivery of interceptor.

PROJECT: _____
 CUSTOMER: _____
 ENGINEER: _____
 ORDER #: _____
 PROJ #: _____
 DATE: _____



Grit Oil Interceptor Model GO
Sizes 500 thru 2000

PM	DRN	ENG	DWG. NO.	REV.
			GO-1	A
DATE			2018	



NAMEPLATE INDICATING:
MFG: PARKUSA
888-611-PARK
WWW.PARKUSA.COM
MODEL: GO-1
DATE MANUFACTURED

30x60 GALV. STEEL PARKway™
FRAME & COVER, RATED FOR
H2O TRAFFIC LOADING

- APPLICATIONS**
- ▣ PARKING GARAGE PRESSURE WASHING
 - ▣ GENERAL INDUSTRY
 - ▣ EQUIPMENT & TRANSPORTATION WASHDOWN FACILITIES
 - ▣ CARWASHES
 - ▣ FIRE STATION WASHDOWN
 - ▣ SERVICE STATION FUEL DEPOTS
 - ▣ MANUFACTURING FACILITY EFFLUENT WATER
 - ▣ CITY MAINTENANCE WASHDOWN

MODEL NO.	CAPACITY USGal	OIL CAP. US (GAL)	FLOW RATE (GPM)	EMPTY WT (LBS)	LENGTH L1	WIDTH W1	HEIGHT H1	INLET FL1	OUTLET FL2
GO-3000	3,000	1,500	300	33,150	13'-0"	7'-0"	8'-0"	6'-9"	6'-6"
GO-4000	4,000	2,000	400	38,100	16'-0"	8'-6"	7'-0"	5'-9"	5'-6"
GO-5000	5,000	2,500	500	41,550	16'-0"	8'-6"	8'-0"	6'-9"	6'-6"
GO-6000	6,000	3,000	600	44,700	16'-0"	8'-6"	9'-0"	7'-9"	7'-6"
GO-7000	7,000	3,500	700	59,908	18'-0"	9'-0"	9'-2"	7'-11"	7'-8"

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION

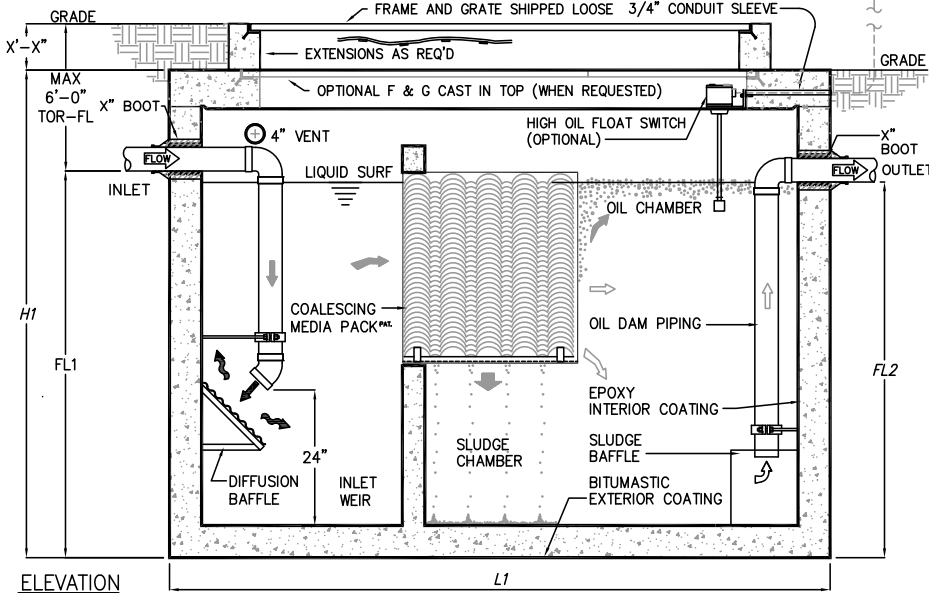


HIGH OIL ALARM PANEL MOUNTED AT REMOTE LOCATION (OPTIONAL)

GUARANTEED PERFORMANCE
A certified performance analysis utilizing a proprietary computer program will accurately model systems to ensure that their effluent qualities meet the required discharge criteria (EPA and Local Codes)

Influent oily water contains oil droplets of many different sizes. These droplets rise at different rates. Park utilizes a statistical program that divides the droplets into ranges of sizes and calculates the rise rates of each range. This calculation determines which droplets the separator can capture.

Contact our Engineering Dept. @ 888-611-PARK for a free performance evaluation.



GUARANTEED PERFORMANCE FOR CODE MAXIMUM OIL CONCENTRATION (SANITARY SEWER 400 PPM, STORM SEWER 15 PPM)

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Specifications

- CONCRETE:** Class 1/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
- REINFORCEMENT:** Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal.
- MATERIALS:** Access frame & cover shall be fabricated with min. 1/4" thick nonskid floor plate, bolt-down, & lifting handles. All materials to be corrosion resistant.

Engineering Data

Interceptor is structurally and hydraulically engineered conforming to Uniform Plumbing Code. Nominal total liquid capacity and oil holding capacity as indicated. Recommended for flow rates of 5 to 180 GPM (consult Park for proper sizing). Manufacturer shall submit performance calculations for oil & water separation certified by a licensed professional engineer. Field excavation and preparation shall be completed prior to delivery of interceptor.

A	.	.	.
REV	DATE	BY	DESCRIPTION
PROJECT: .			
CUSTOMER: .			
ENGINEER: .			
ORDER #:	.	PROJ #:	.
DATE:	.	LOCATION:	.

PARK USA

www.parkusa.com 888-611-PARK

GRIT/OIL INTERCEPTOR MODEL GO
SIZES 3000 THRU 7000

PM	PC	DRN	ENG	DWG. NO.	REV.
.	.	.	.	GO-2	.
DATE					

NAMEPLATE INDICATING:
MFG: ParkUSA
888-611-PARK
www.ParkUSA.com
MODEL: GOS
DATE MANUFACTURED

NOTES

- ① STEEL INTERCEPTOR BASIN
- ② SKID-RESISTANT STEEL COVER WITH NEOPRENE GASKET, SECURED WITH SS BOLTS
- ③ PIPE CONNECTION, FEMALE NPT
- ④ TYPICAL BAFFLE
- ⑤ OLEOPHILIC COALESCING PLAT PACK TO SEPARATE OIL & SOLIDS
- ⑥ ADJUSTABLE SKIMMER
- ⑦ 2" DRAIN w/ PLUG
- ⑧ 8" BOLTED & GASKETED INSPECTION PORTS

CMP Separators

Series CMP coalescing plate separators are designed to receive oily wastewater by gravity or pump flow and process it on a once-thru or circulating basis. There are no moving parts to fail or require expensive maintenance.

Guaranteed Performance

Preengineered coalescing media packs are utilized for enhanced separation which provide SUPERIOR performance compared to other separators which depend on baffles only.

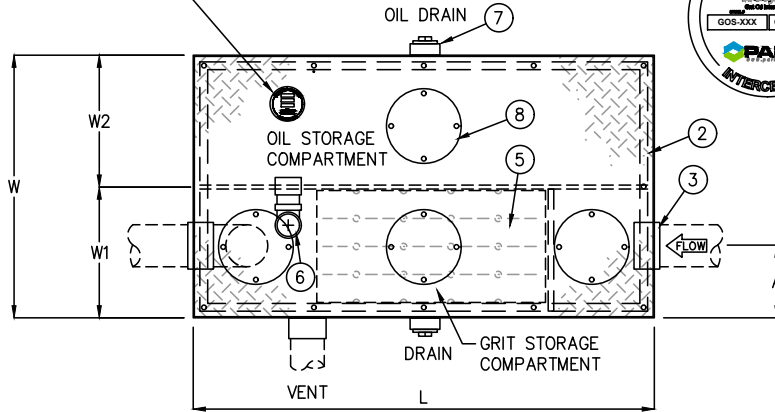
A certified performance analysis utilizing a proprietary computer program will accurately model systems to ensure that their effluent qualities meet the required discharge criteria (EPA and Local Codes)

Influent oily water contains oil droplets of many different sizes. These droplets rise at different rates. Park utilizes a statistical program that divides the droplets into ranges of sizes and calculates the rise rates of each range. This calculation determines which droplets the separator can capture.

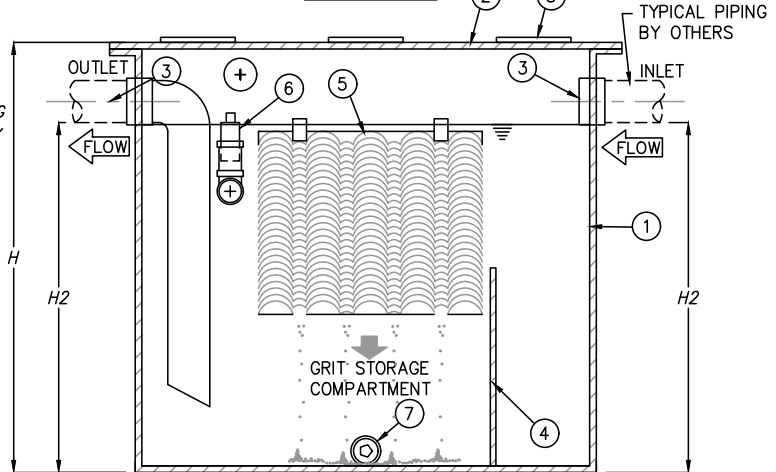
Contact our Engineering Dept. @ 888-611-PARK for a free performance evaluation and for sizes not listed.

APPLICATIONS

- PARKING GARAGE PRESSURE WASHING
- GENERAL INDUSTRY
- EQUIPMENT & TRANSPORTATION WASHDOWN FACILITIES
- CARWASHES
- CITY MAINTENANCE WASHDOWN
- SERVICE STATION FUEL DEPOTS
- MANUFACTURING FACILITY EFFLUENT WATER



PLAN VIEW



ELEVATION

MODEL CMP-GO GRIT-OIL SEPARATOR												
MODEL	SIZE	FLOW CAP GPM	GRIT STORAGE CAPACITY (LBS)	OIL STORAGE CAPACITY (GAL)	H	H2	L	W	W1	W2	EMPTY WEIGHT-LBS	GROSS WEIGHT-LBS
GOS-200	200	20	1080	52	4'-0"	3'-6"	4'-0"	2'-0"	1'-6"	6"	960	2,640
GOS-300	300	30	2160	52	4'-0"	3'-6"	4'-0"	3'-6"	3'-0"	6"	1,250	4,240
GOS-400	400	40	2520	52	4'-0"	3'-6"	4'-0"	4'-0"	3'-6"	6"	1,350	4,770
GOS-500	500	50	3240	59	4'-0"	3'-6"	4'-6"	4'-6"	4'-0"	6"	1,570	5,910
GOS-600	600	60	3600	65	4'-0"	3'-6"	5'-0"	4'-6"	4'-0"	6"	1,700	6,520
GOS-800	800	80	4680	85	4'-0"	3'-6"	6'-6"	4'-6"	4'-0"	6"	2,070	8,350
GOS-1000	1000	100	5760	104	4'-0"	3'-6"	8'-0"	4'-6"	4'-0"	6"	2,450	10,170

STANDARD CONNECTION SIZES ARE: INLET / OUTLET 4", VENT IS 2"

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Specifications

TANK SHALL BE DESIGNED TO WITHSTAND STATIC & DYNAMIC HYDRAULIC LOADINGS WHILE EMPTY & DURING OPERATION. TANK SHALL BE CONSTRUCTED OF 3/16" CARBON STEEL CONFORMING TO ASTM A36 FOR TANK, WEIRS, FLOW DISTRIBUTORS, AND ENERGY DISSIPATER DEVICE. ALL INTERNAL COMPONENTS SHALL CONSIST OF CORROSION RESISTANT MATERIALS OR BE COAL TAR EPOXY COATED. WELD IN ACCORDANCE WITH AWA D1.1 TO PROVIDE WATER-TIGHT TANK THAT WILL NOT WARP OR DEFORM EXCESSIVELY UNDER LOAD. MANWAY ACCESS COVERS SHALL BE BOLTED AND GASKETED. TANK INTERIOR & EXTERIOR SHALL BE COATED 8 MILS FLEXCOAT EPOXY.

Engineering Data

A FABRICATED GRIT-OIL INTERCEPTOR IS RECOMMENDED FOR APPLICATIONS WHERE THE INTERCEPTOR INSTALLATION IS ABOVE GRADE. TYPICAL APPLICATIONS INCLUDE VEHICLE WASHDOWN, STORMWATER RUN-OFF, MARINE APPLICATIONS, SPILL CONTROL, & GENERAL INDUSTRY.



PROJECT: _____
 CUSTOMER: _____
 ENGINEER: _____
 ORDER #: _____
 PROJ #: _____
 DATE: _____



Grit-Oil Interceptor Model GOS
Sizes 200 thru 1000

PM	DRN	ENG	DWG. NO.	REV.
DATE	2018	GOS-1		A

REMOVABLE COVER
w/ GASKET & SS BOLTS

INLET
PIPING

2" SUCTION PORT
(TYP-2)

COALESCING
MEDIA PACK™

NAMEPLATE INDICATING:
MFG: PARKUSA
(888)611-PARK
WWW.PARKUSA.COM
MODEL: GOSR
DATE MANUFACTURED

PLAN VIEW

GOSR-XXXX-X-XXX
INTERCEPTOR SIZE
275 - 275 GALLONS
550 - 550 GALLONS
1000 - 1000 GALLONS
ETC...

MAXIMUM FLOW RATE
25 - 25 GPM
50 - 50 GPM
ETC...

COVER TYPE
P - PEDESTRIAN DUTY
LH - TRAFFIC DUTY



APPLICATIONS

- MAINTENANCE WASHDOWN & PARKING GARAGES
- EQUIPMENT & TRANSPORTATION WASHDOWN FACILITIES
- CARWASHES
- STORMWATER RUNOFF
- SERVICE STATION FUEL DEPOTS
- MANUFACTURING FACILITY EFFLUENT WATER
- REMEDIATION WATER CLEANUP
- GENERAL INDUSTRY

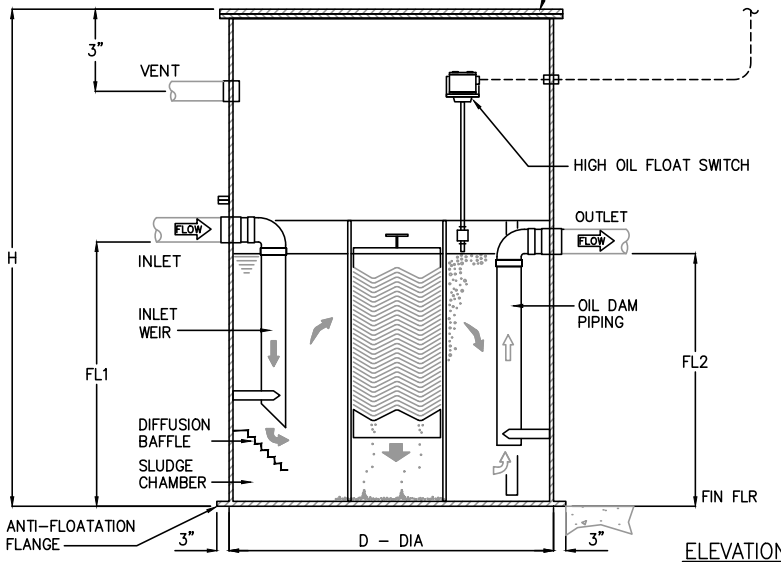
SAND-OIL INTERCEPTOR SCHEDULE

MODEL NO.	CAPACITY USGal	OIL CAP. US (GAL)	EMPTY WT (LBS)	MAX FLOW RATE (gpm)	DIA D	INLET FL1	OUTLET FL2	HEIGHT H
GOSR-275	300	150	800	30	48"	39"	36"	48"
GOSR-500	500	250	1,000	50	48"	66"	63"	75"
GOSR-750	750	375	1,500	75	60"	63"	60"	72"
GOSR-1000	1,000	500	2,000	100	72"	60"	57"	69"
GOSR-1500	1,500	750	2,500	150	84"	65"	62"	74"

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION



REMOVABLE COVER
w/ GASKET & SS BOLTS,
(PEDESTRIAN OR TRAFFIC
DUTY)



GUARANTEED PERFORMANCE

A certified performance analysis utilizing a proprietary computer program will accurately model systems to ensure that their effluent qualities meet the required discharge criteria (EPA and Local Codes)

Influent oily water contains oil droplets of many different sizes. These droplets rise at different rates. Park utilizes a statistical program that divides the droplets into ranges of sizes and calculates the rise rates of each range. This calculation determines which droplets the separator can capture.

Contact our Engineering Dept. @ 800-256-8041 for a free performance evaluation.



GUARANTEED PERFORMANCE FOR CODE MAXIMUM OIL CONCENTRATION (SANITARY SEWER 400 PPM, STORM SEWER 15 PPM)

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Specifications

TANK DESIGN: The tank shall be constructed of corrosion resistant materials; coated steel or fiberglass construction. All components shall be designed for structural integrity for above grade installation.

COMPONENTS: Access frame & cover shall be fabricated with min. 1/4" thick nonskid floor plate, bolt-down, gasketed, & lifting handles. All materials to be corrosion resistant.

Engineering Data

Interceptor is structurally and hydraulically engineered conforming to Uniform Plumbing Code. Nominal total liquid capacity and oil holding capacity as indicated. Recommended for flow rates as indicated (consult Park for proper sizing). Manufacturer shall submit performance calculations for oil & water separation certified by a licensed professional engineer. Field preparation shall be completed prior to delivery of interceptor. Use dimensional data as shown.

A	.	.	.
REV	DATE	BY	DESCRIPTION
PROJECT: .			
CUSTOMER: .			
ENGINEER: .			
ORDER #:	.	PROJ #:	.
DATE:	.	LOCATION:	.
www.parkusa.com 888-611-PARK			
GRIT/OIL INTERCEPTOR MODEL GOSR ABOVE-GRADE INSTALLATION			
PM	PC	DRN	ENG
DWG. NO.			REV.
DATE			GOSR-1

Wastewater Systems

GOSR-1



GRIT Separation System

With the establishment of Phase I & II Stormwater Regulations by the EPA and in keeping with city and county NPDES permits, it is unlawful to discharge cosmetic wash water into the municipal separate stormwater system (MS4). (Cosmetic wash water discharge refers to any water that has been applied from a wand, nozzle, or other portable applicator, to a fixed surface, whether indoor or outdoor, for the purpose of removing dirt, oil, grease, animal feces and other stains.)

ParkUSA®'s GoTrooper™ Grit-Oil Interceptor and Sample Well is specific to this commercial application and complies with all relevant codes.

OilStop Valve is protected by US Patent #9,963,358

Features

- Double-wall tank with leak detection
- Direct-bury a• Pre-engineered from 500 - 15,000 gallons
- Precast concrete, polyethylene, fiberglass or steel construction
- Above or below grade installation
- Pedestrian or traffic rated
- Remote maintenance alarm
- Interior liners available
- Meets all building codes

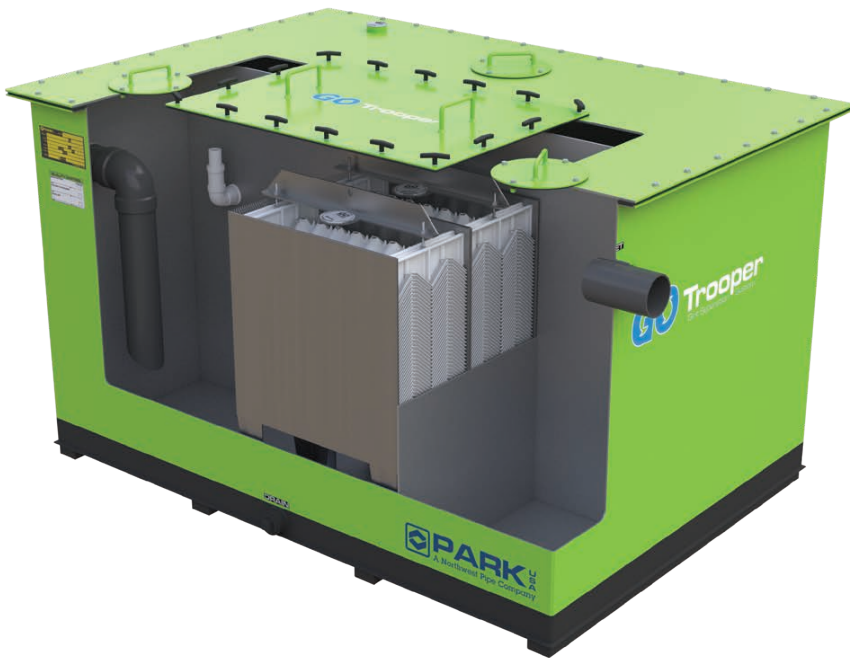


Control Panel



#BUILDING AMERICA!

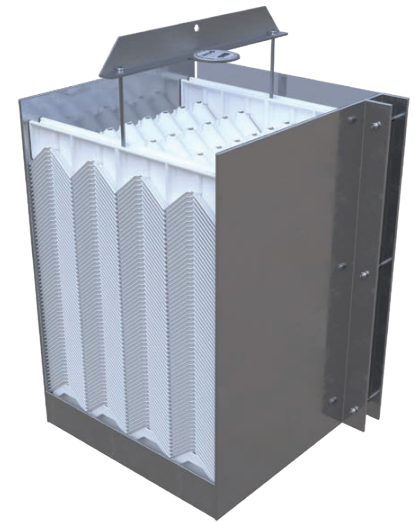
WW | GOTROOPER
Standard



System Components

The ParkUSA® GoTrooper™ Grit-Oil Interceptor includes the following components:

- Precast Concrete, Steel, or Composite Separator Basin
- Access covers or hatchways
- Access ladders
- Safety hatchnets
- High-level alarm and control panel



Coalescing Media Plates

As stormwater pollutants travel through the CMP (coalescing media plate pack) oil rises to the top and solids drop to the bottom through dedicated surfaces and weep holes. Plate supports at the bottom allow for easy removal of the solids that collect beneath the plates. Because of the steep angles and short travel distances, oils and solids are quickly released, eventually floating to the surface of the unit or settling to the bottom.

How it Works

The function of the Grit-Oil Interceptor is to intercept & retain cosmetic wash water. The unit can be designed to function as a gravity flow or pumped-driven system. The wastewater flows into an inlet chamber & passes through a baffle and oleophilic coalescing plate pack to separate oil and solids. The discharging effluent comprises the clearer water underneath the floating oils.

Depending on the application, the Grit-Oil interceptor may be installed below grade or above ground. The interceptor is typically constructed of precast concrete, steel, or composite material providing years of continuous service. The interceptor is divided into several compartments where wash water discharge oil will coagulate and float to the surface, and sand (grit) will sink to the bottom.

Visit gotrooper.parkusa.com for more information and design assistance.

To request a quote or catalog, visit request.parkusa.com.

APPLICATIONS



Good to use
in BMPs



Parking
Garages



Commercial



Industrial



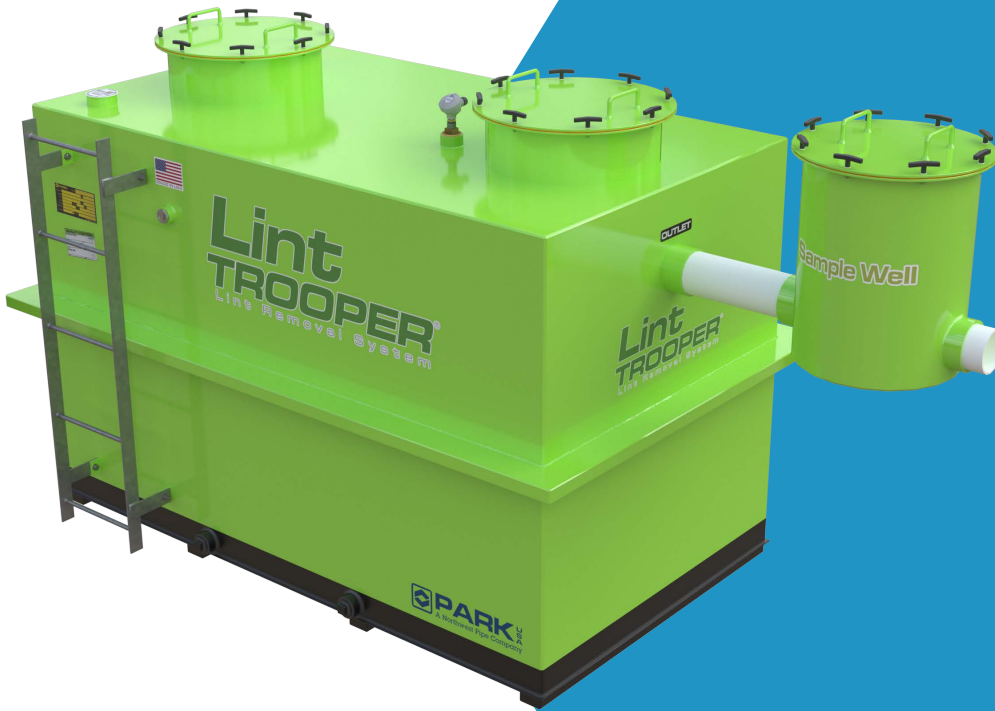
Sediments
Retention



Wash
Racks

Lint TROOPER[®]

Lint Removal System



PARK
USA
A Northwest Pipe Company

ENGINEERING FACTS

GENERAL INFORMATION

The ParkUSA Lint interceptor is used in non-private establishments to remove excessive amounts of lint and silt that may interfere with the proper drainage and treatment of waste water. Local plumbing codes generally require the installation of a lint interceptor where there is a sufficient amount of waste material. Typical applications include commercial/institutional laundromats and dry-cleaners. The waste discharge from these facilities usually contains high quantities of lint, silt, dissolved and suspended solids, as well as detergents.

The unit is compliant with both UPC and IPC Plumbing Codes, these guidelines require the interceptor to be equipped with a debris screen, wire basket or similar device, removable for cleaning, that prevents string, rags, buttons and other materials ½ inch (12.7 mm) or larger from entering the public sewer system.

LINTTROOPER MODELS



Model LTSC Lint Interceptor

The Model LTSC Lint Interceptor is a wastewater lint separator featuring one and two compartments, each accessible via 24-inch diameter manways. A reusable & removable stainless-steel screen filter is contained in the effluent compartment to prevent solids from exiting into the public sewer system. All solids are detained inside the separator for removal by a waste disposal service. The separator can detain a large quantity of solid debris separator over extended amount of time. The Model LTSC Lint Interceptor is ideal for project applications that have no onsite maintenance personnel and maintained on an infrequent basis.



Model LTSSB Solids Interceptor

The Model LTSSB Solids Interceptor is a wastewater solids separator featuring a compact design with a single compartment accessible via a 24-inch diameter manway. A removable & cleanable stainless-steel screen filter basket is contained within the compartment to screen and detain solids from the wastewater before the fluid exits into the public sewer system. The solids are removed and disposed of by removing the basket filter and emptying into a solid waste receptacle. After cleaning, the screen filter is placed back into the separator and placed back into service. The Model SSB Solids interceptor is designed for project applications that have onsite maintenance personnel, who can service the unit on a routine basis.

The ParkUSA® Lint interceptor is used in non-private establishments to remove excessive amounts of lint and silt that may interfere with the proper drainage and treatment of waste water. Local plumbing codes generally require the installation of a lint interceptor where there is a sufficient amount of waste material.

FEATURES

- Pre-Engineered from 500 - 15,000 Gallons
- Precast Concrete, Polyethylene, Fiberglass or Steel Construction
- Above or Below Grade Installation
- Pedestrian or Traffic Rated
- Remote Maintenance Alarm
- Interior Liners Available
- Meets all Building Codes

SYSTEM COMPONENTS

The ParkUSA Lint Interceptor includes the main components listed below:

Stainless-Steel Screen Filter: the unit presents a stainless-steel screen filter whose design varies by product model. For the LTSC configuration, the filter is a basket device located at the outlet. And for the LTSSB variation, the screen filter occupies the whole sectional area of the unit, being in a “table” design and the flow going downward.

Sensors: Indicate water level inside unit.

Control Panel: The Control System consists of a panel that receives signal from the high-level sensor, it is programmed for easy use for the end-user.

Containments Vault: The shell of the unit can be constructed from Precast Concrete, Polyethylene, Fiberglass, or Steel. Model names and configurations vary by material.

OPERATION

The purpose of the lint interceptor is to receive the liquid lint/silt laden wastewater and retain it for a sufficient amount of time, which allows for cool-down, thus promoting separation and fall-out of the lint/silt.

A lint interceptor, or commonly referred to as a “lint trap”, is typically located outside of the building and buried below grade. The principle advantage is the cooling effect obtained from the earth. The buried interceptor is typically constructed of precast concrete, providing years of continuous service. The interceptor contains several compartments where the lint will coagulate and float to the surface, and heavier solids will sink to the bottom. The discharging effluent comprises of the clearer water between these layers.

DESIGN CONSIDERATIONS

One of the most important features for the successful operation of the lint interceptor is the maintenance program. Regardless of the size or design, an interceptor is only as good as its maintenance program. For this reason, most plumbing codes require the interceptor to be installed and located so that it will be easily accessible for inspection, cleaning and removal of intercepted waste products.

There should be an adequate number of manholes to permit access for cleaning all areas of the interceptor. A manhole should be located near the inlet and the outlet. The manhole should not be less than 20 inches in the least dimension. All manholes should extend to grade. The interceptor should be located near the source of the wastewater for the protection of the piping system. The lint interceptor should be buried so as to intercept the building sewer. Inlet and outlet piping shall be a minimum of 4 inches or the size of the building sewer, whichever is greater. Most jurisdictions require a sampling well on the discharging side of the interceptor so that an inspector can verify proper treatment or maintenance.

MAINTENANCE

The lint interceptor should be cleaned (or pumped out) routinely to prevent the escape of appreciable quantities of lint, silt and suspended solids. Cleaning should be performed when the interceptor is at 75 percent of lint/silt retention. The frequency of cleaning at any given installation will vary depending on use. Pumping frequencies for Laundromats usually range from once a month, to once every six months.



SIZING

The lint interceptor is generally sized according to the local plumbing code. The different variables include number of washing machines, wastewater flow rate, wastewater detention time, storage factor, and detention time. Establishments with more than 30 washing machines need to have the lint interceptor sized by a Registered Professional Engineer.

This BMP for commercial laundromats has proven effective for over a quarter century. The method originated from established plumbing codes and has been utilized by many "Authorities Having Jurisdiction" (AHJ). For Laundromats, the equation to use is:

$$(TGC) \times (CPH) \times (RT) \times (ST) = \text{Size (gallons) of Interceptor}$$

Example: A typical commercial Laundromat has 30 small washing machines and two large machines. The manufacturer states that small machines use 38 gallons of water per complete wash cycle of 25 minutes. The large machines use 52 gallons per each complete wash cycle of 30 minutes. The Laundromat will be open 16 hours a day. What size interceptor is required to connect to a private sewage disposal system?

Solution: The first step is to determine the total number of gallons per cycle. Use the manufactures' data on the washing machines if available. (In absence of this data, use 50 gallons per wash cycle per machine).

1. Number of machines: 30 small
Numbers of machines: 2 large
2. $TGC = 30 \times 38 \text{ gallons/cycle} = 1140 \text{ gallons/cycle}$
 $+ 2 \times 52 \text{ gallons/cycle} = 104 \text{ gallons/cycle}$
 $1244 \text{ gallons/cycle}$
3. $CPH = 2 \text{ cycles per hour}$
4. Retention Time $RT = 2.0 \text{ hours}$
5. Storage Factor $ST = 1.5$

Using the formula:

$$(TGC) \times (CPH) \times (RT) \times (ST) = \text{Size of Interceptor (gallons)}$$

$$(1244) \times (2) \times (2.0) \times (1.5) = 7464 \text{ Gallons}$$

Typical Amendment by cities for smaller Laundromats:

1. Laundry with 5 to 10 washing machines
500-Gallon Capacity (LintTrooper® LT-500)
2. Laundry with 11 to 20 washing machines
1,000-Gallon Capacity (LintTrooper® LT-1000)
3. Laundry with 21 to 30 washing machines
1,500-Gallon Capacity (LintTrooper® LT-1500)



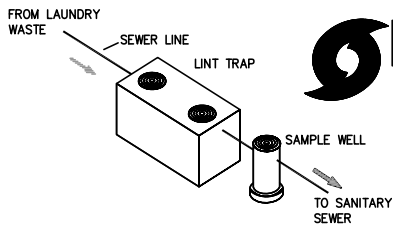
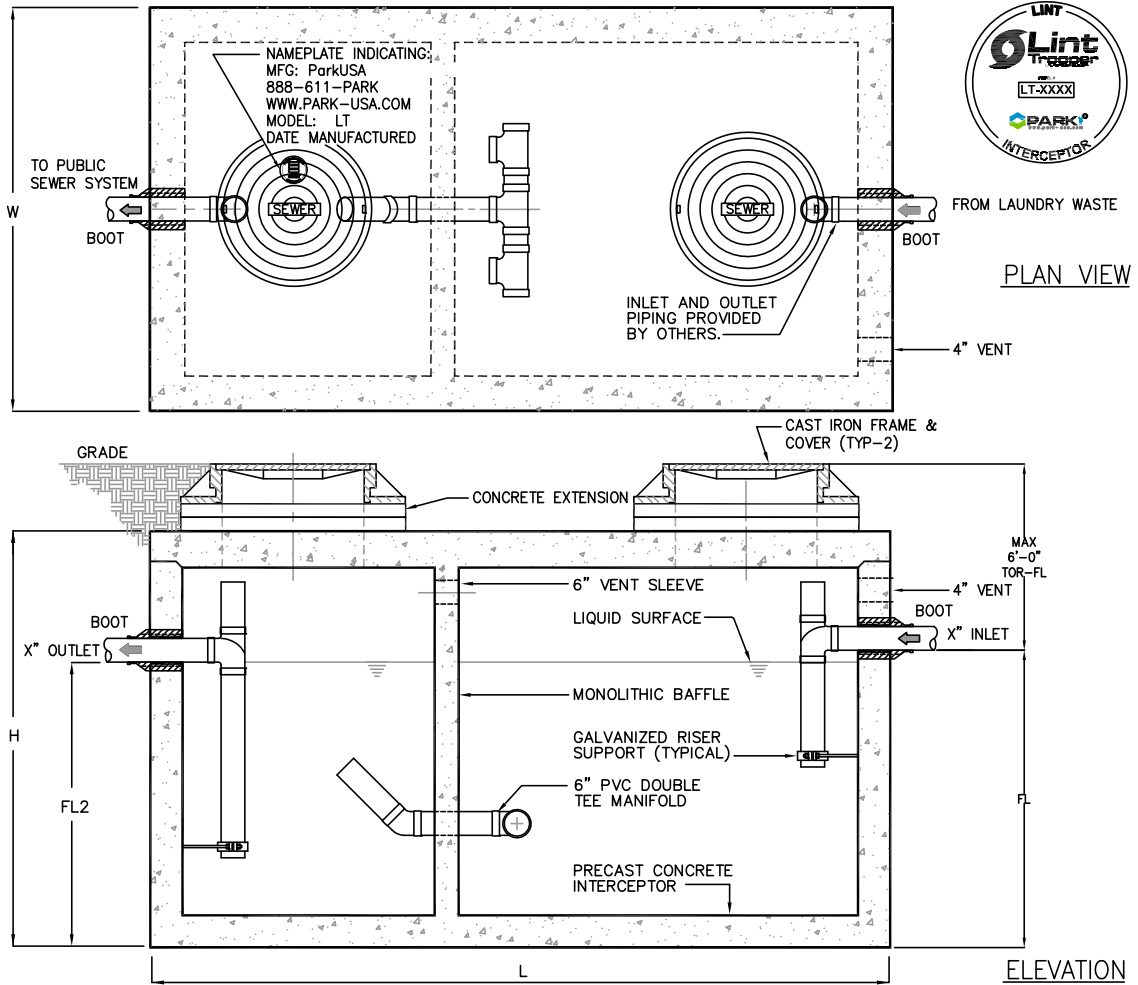
Establishments with more than 30 washing machines shall be sized by a Registered Professional Engineer. Current sizes available are described below.

LTSSB Model Sizes Available

MODEL NUMBER	CAPACITY (GAL)	SOLIDS CAPACITY (LBS)	SCREEN QTY	STANDARD SIZE LENGTH X WIDTH
LTSSB-150	150	40	1	4'-0" X 4'-0"
LTSSB-200	200	50	1	4'-0" X 4'-0"
LTSSB-250	250	60	1	4'-0" X 4'-0"
LTSSB-300	300	70	1	4'-0" X 4'-0"
LTSSB-350	350	80	2	5'-0" X 5'-0"
LTSSB-550	550	120	3	6'-0" X 6'-0"
LTSSB-750	750	150	3	6'-0" X 6'-0"

LTSC Model Sizes Available

MODEL NUMBER	STANDARD SIZE LENGTH X WIDTH	NOMINAL (FLOWRATE GPM)	INTERCEPTOR VOLUME (GAL)	SOLIDS CAPACITY (CU FT)
LTSC-500	7'-10" X 4'-4"	50	500	20
LTSC-750	7'-10" X 4'-4"	75	750	30
LTSC-1000	8'-8" X 5'-4"	100	1,000	40
LTSC-1500	9'-0" X 6'-0"	150	1,500	60
LTSC-2000	9'-0" X 6'-0"	200	2,000	80
LTSC-3000	12'-0" X 6'-0"	300	3,000	120
LTSC-4000	15'-0" X 7'-6"	400	4,000	160
LTSC-5000	15'-0" X 7'-6"	500	5,000	200
LTSC-6000	15'-0" X 7'-6"	600	6,000	280
LTSC-7000	18'-9" X 9'-0"	700	7,000	240
LTSC-8000	18'-9" X 9'-0"	800	8,000	320
LTSC-9000	18'-9" X 9'-0"	900	9,000	360
LTSC-10000	18'-9" X 9'-0"	1,000	10,000	400
LTSC-12000	21'-2" X 11'-2"	1,200	12,000	480
LTSC-15000	21'-2" X 11'-2"	1,500	15,000	600



TYPICAL APPLICATIONS INCLUDE COMMERCIAL AND INDUSTRIAL LAUNDRY FACILITIES WHERE EXCESSIVE SILT & LINT MAY INTERFERE WITH THE PROPER DRAINAGE OF THE SEWER SYSTEM. THE LINT INTERCEPTOR IS GENERALLY BURIED BELOW GRADE FOR GRAVITY FLOW SEWER SYSTEMS. A SAMPLE WELL IS UTILIZED ON THE OUTLET SIDE FOR SAMPLING BY THE LOCAL WATER AUTHORITY.

SPECIFICATIONS

- CONCRETE : CLASS I/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR, FIRST STAGE OF WALL AND BAFFLE WITH SECTIONAL RISER TO REQUIRED DEPTH. (MONOLITHIC BAFFLE REQUIRED, SLIDE-IN TYPE IS NOT ACCEPTABLE)
- REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS: MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48 CLASS 30. MANHOLE SHALL BE NOMINAL 24 INCH DIAMETER AND BE TRAFFIC DUTY.

LINT INTERCEPTOR SCHEDULE								
MODEL NO.	CAPACITY USGal	EMPTY WT (LBS)	LENGTH L	WIDTH W	HEIGHT H	INLET FL1	OUTLET FL2	
LT-500	500	9,500	7'-10"	4'-4"	4'-6"	3'-3"	3'-0"	
LT-750	750	9,900	7'-10"	4'-4"	6'-0"	4'-5"	4'-2"	
LT-1000	1,000	13,350	8'-8"	5'-0"	6'-0"	4'-9"	4'-6"	
LT-1250	1,250	14,650	9'-2"	5'-8"	6'-0"	4'-9"	4'-6"	
LT-1500	1,500	16,050	9'-2"	5'-8"	7'-0"	5'-9"	5'-6"	
LT-2000	2,000	21,250	9'-0"	6'-0"	8'-0"	6'-9"	6'-6"	
LT-2500	2,500	27,050	13'-0"	7'-0"	7'-0"	5'-9"	5'-6"	
LT-3000	3,000	33,150	13'-0"	7'-0"	8'-0"	6'-9"	6'-6"	
LT-3500	3,500	38,550	13'-0"	7'-0"	8'-6"	7'-3"	7'-0"	
LT-4000	4,000	38,100	16'-0"	8'-6"	7'-0"	5'-9"	5'-6"	

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION
ENGINEERING DATA

THE LINT INTERCEPTOR IS STRUCTURALLY & HYDRAULICALLY ENGINEERED TO CONFORM TO REGIONAL PLUMBING CODES RECOMMENDED IN MOST CITIES. CONSULT WITH LOCAL AUTHORITIES FOR SPECIFIC APPLICATION REQUIREMENTS.

SHOP DRAWINGS SHALL INCLUDE COMPLETE STRUCTURAL & BOUYANCY CALCULATIONS CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER UPON REQUEST.

CONSULT WITH PARK EQUIPMENT COMPANY FOR EXACT EXCAVATION DIMENSIONS & SHIPPING INFORMATION.

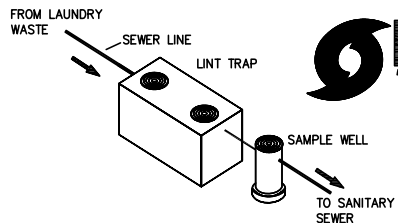
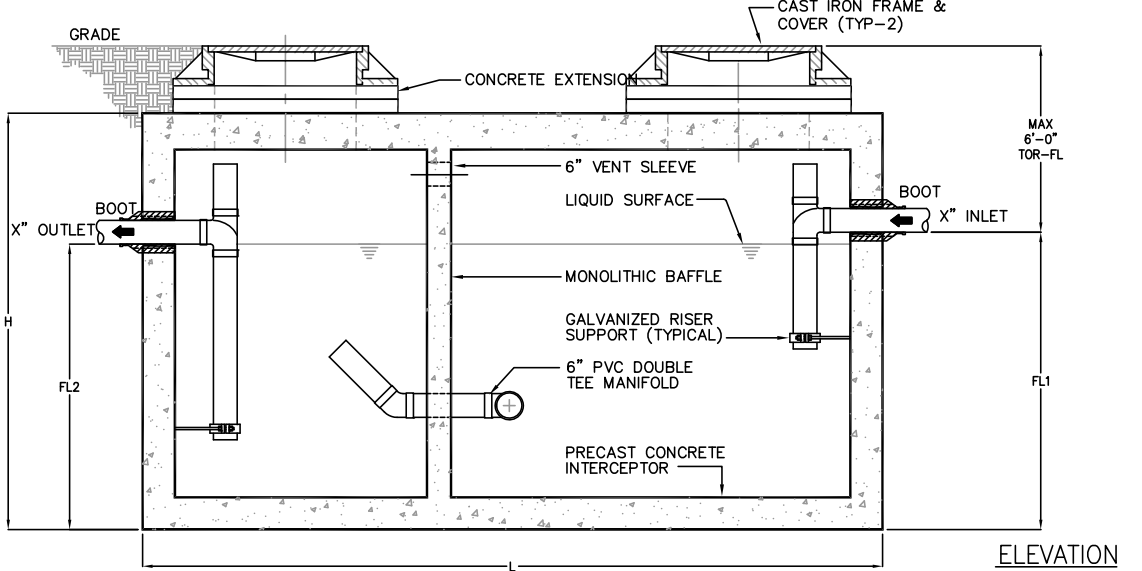
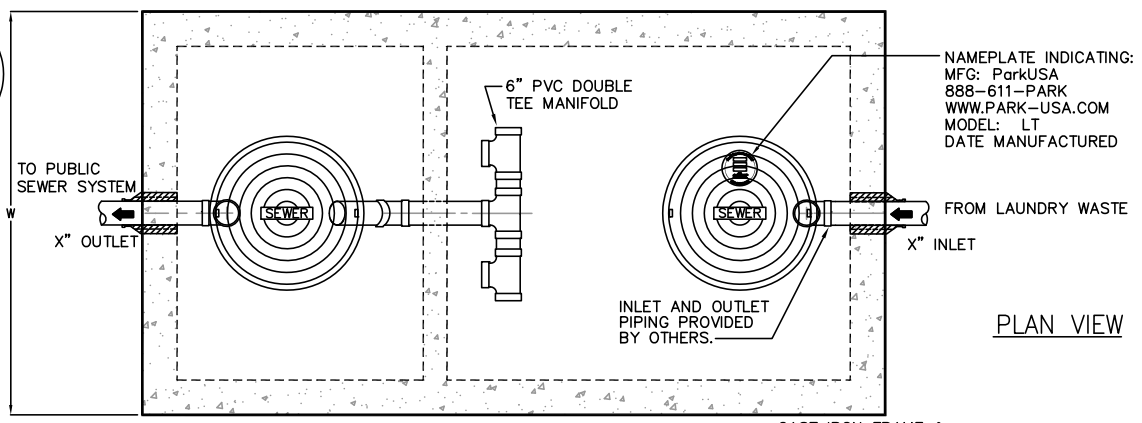


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LINT TRAP SERIES LT
500 THRU 4000 GALLON CAPACITY

SCALE	NONE	DWG. NO.	LT-1	REV.
DATE	06/18			A



TYPICAL APPLICATIONS INCLUDE COMMERCIAL AND INDUSTRIAL LAUNDRY FACILITIES WHERE EXCESSIVE SILT & LINT MAY INTERFERE WITH THE PROPER DRAINAGE OF THE SEWER SYSTEM. THE LINT INTERCEPTOR IS GENERALLY BURIED BELOW GRADE FOR GRAVITY FLOW SEWER SYSTEMS. A SAMPLE WELL IS UTILIZED ON THE OUTLET SIDE FOR SAMPLING BY THE LOCAL WATER AUTHORITY.

SPECIFICATIONS

- CONCRETE : CLASS I/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR, FIRST STAGE OF WALL AND BAFFLE WITH SECTIONAL RISER TO REQUIRED DEPTH. (MONOLITHIC BAFFLE REQUIRED, SLIDE-IN TYPE IS NOT ACCEPTABLE)
- REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS: MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48 CLASS 30. MANHOLE SHALL BE NOMINAL 24 INCH DIAMETER AND BE TRAFFIC DUTY.

LINT INTERCEPTOR SCHEDULE							
MODEL NO.	CAPACITY USGal	EMPTY WT (LBS)	LENGTH L	WIDTH W	HEIGHT H	INLET FL1	OUTLET FL2
LT-5000	5,000	41,550	16'-0"	8'-6"	8'-0"	6'-9"	6'-6"
LT-6000	6,000	44,700	16'-0"	8'-6"	9'-0"	7'-9"	7'-6"
LT-7000	7,000	59,908	18'-0"	9'-0"	9'-2"	7'-11"	7'-8"
LT-8000	8,000	65,018	18'-0"	9'-0"	10'-0"	8'-9"	8'-6"
LT-9000	9,000	69,116	18'-0"	9'-0"	10'-10"	9'-7"	9'-4"
LT-10000	10,000	85,760	21'-2"	11'-2"	8'-8"	7'-5"	7'-2"
LT-11000	11,000	89,950	21'-2"	11'-2"	9'-6"	8'-3"	8'-0"
LT-12000	12,000	93,280	21'-2"	11'-2"	10'-0"	8'-9"	8'-6"
LT-13000	13,000	97,960	21'-2"	11'-2"	10'-6"	9'-3"	9'-0"
LT-14000	14,000	101,040	21'-2"	11'-2"	11'-2"	9'-11"	9'-8"
LT-15000	15,000	107,700	21'-2"	11'-2"	12'-2"	10'-11"	10'-8"

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION

ENGINEERING DATA
THE LINT INTERCEPTOR IS STRUCTURALLY & HYDRAULICALLY ENGINEERED TO CONFORM TO REGIONAL PLUMBING CODES RECOMMENDED IN MOST CITIES. CONSULT WITH LOCAL AUTHORITIES FOR SPECIFIC APPLICATION REQUIREMENTS.

SHOP DRAWINGS SHALL INCLUDE COMPLETE STRUCTURAL & BOUYANCY CALCULATIONS CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER UPON REQUEST.

CONSULT WITH PARK EQUIPMENT COMPANY FOR EXACT EXCAVATION DIMENSIONS & SHIPPING INFORMATION.



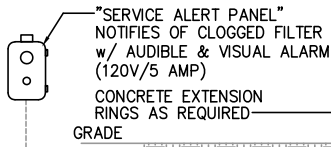
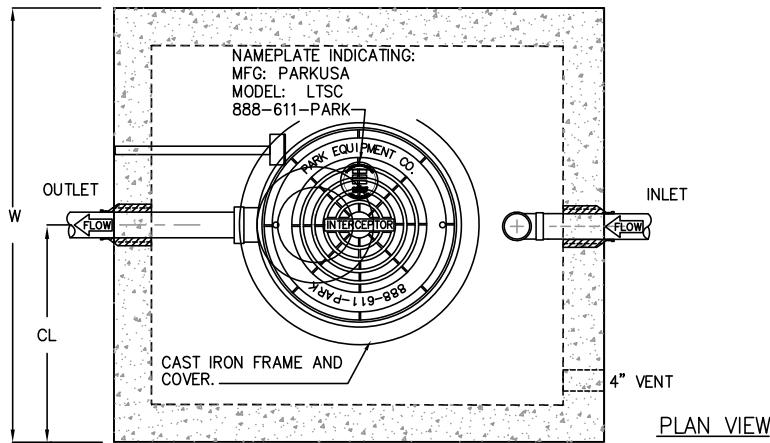
LINT TRAP SERIES LT 5000 THRU 15000 GALLON CAPACITY			
SCALE	NONE	DWG. NO.	REV.
DATE	06/18	LT-2	A

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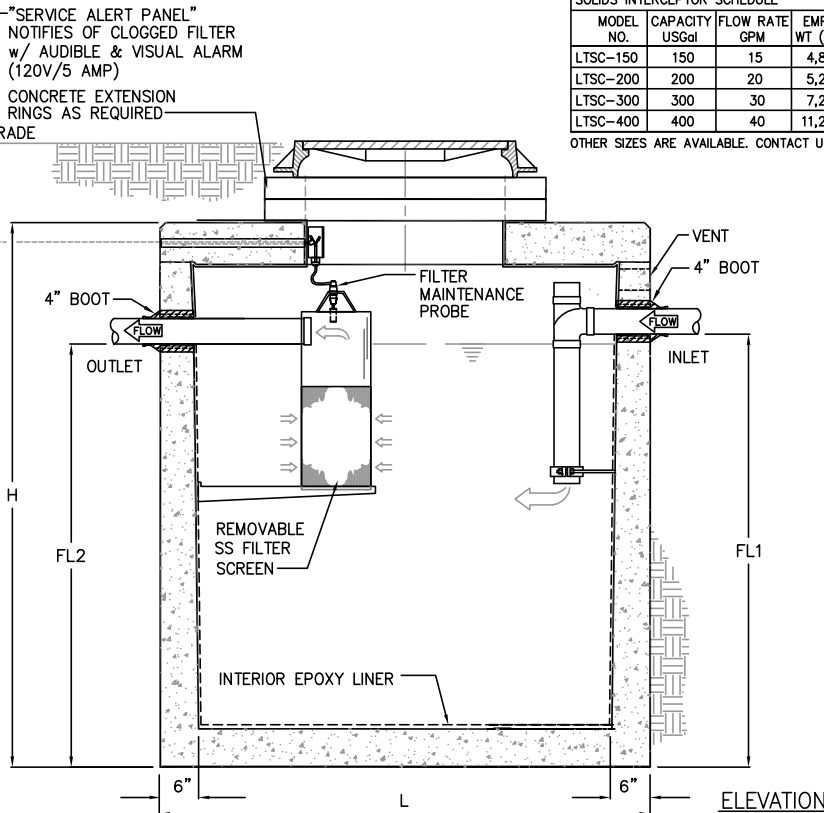
APPLICATIONS

- LAUNDROMATS
- HOTELS
- CLOTHING MANUFACTURES
- INSTITUTIONS



MODEL NO.	CAPACITY USGal	FLOW RATE GPM	EMPTY WT (LBS)	LENGTH L	WIDTH W	HEIGHT H	INLET FL1	OUTLET FL2
LTSC-150	150	15	4,800	3'-6"	3'-6"	5'-5"	4'-0"	3'-9"
LTSC-200	200	20	5,200	5'-0"	5'-0"	4'-2"	3'-1"	2'-10"
LTSC-300	300	30	7,200	5'-0"	5'-0"	4'-8"	3'-3"	3'-0"
LTSC-400	400	40	11,200	5'-0"	5'-0"	5'-5"	4'-0"	3'-9"

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION



Specifications

- CONCRETE :** Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor, first stage of wall and baffle with sectional riser to required depth. gross empty weight of approximately indicated.
- REINFORCEMENT:** Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal. Structural design is based on AASHTO HS20 loading.
- C.I. CASTINGS:** Manhole frames, covers or grates are manufactured of grey cast iron conforming to ASTM A48-76 Class 30. Manhole shall have 24 inch inside diameter and be traffic duty.

Engineering Data

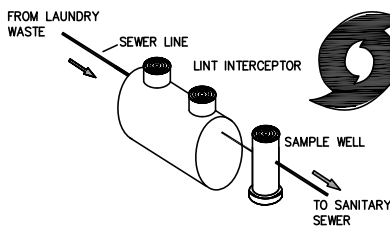
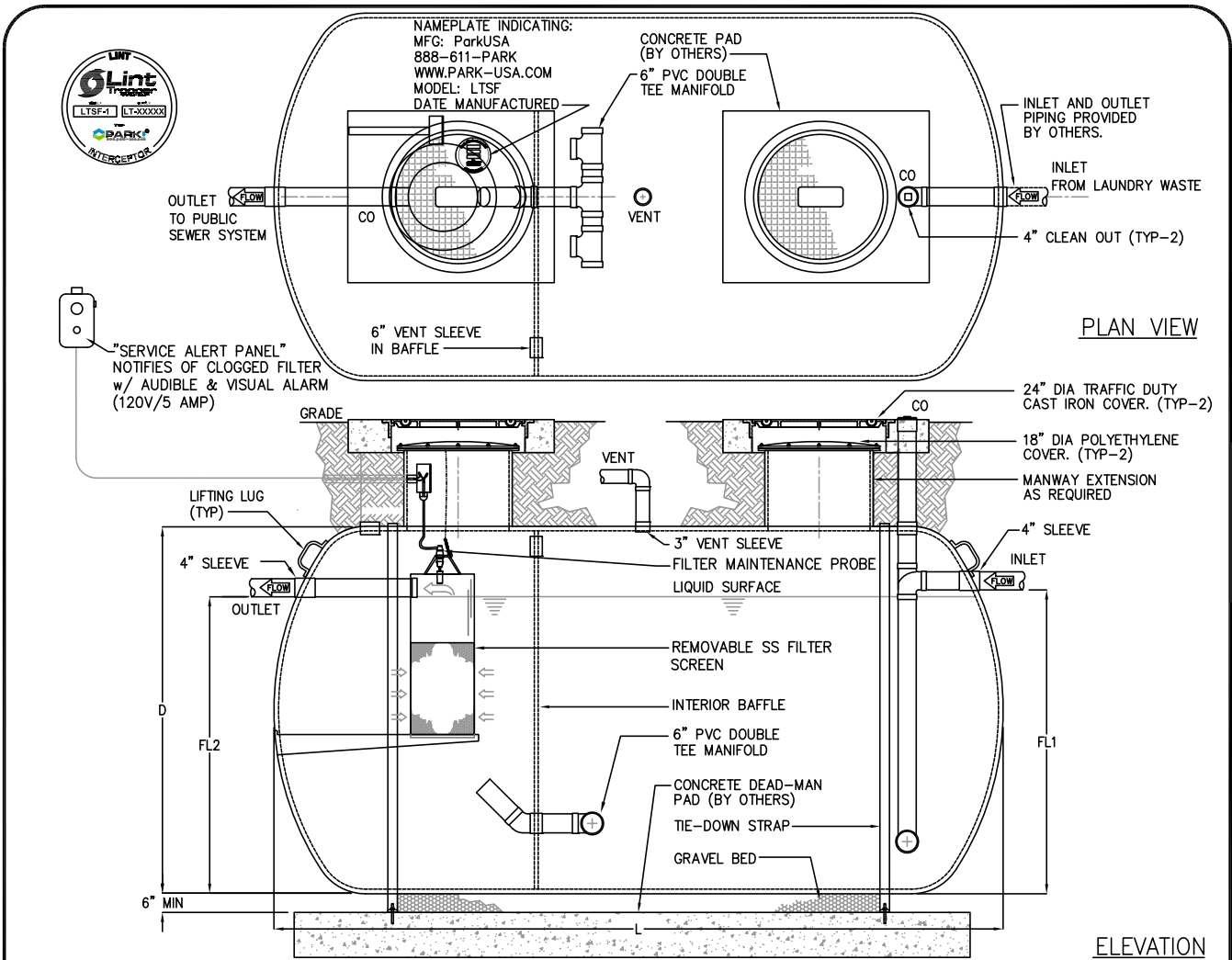
Interceptor is structurally and hydraulically engineered conforming to local Plumbing Codes. Nominal liquid capacity as indicated. Manufacturer shall provide buoyancy calculations certified by a licensed engineer upon request. Field excavation and preparation shall be completed prior to delivery of interceptor. Use dimensional data as shown.

PROJECT : XX
CUSTOMER : XX
ENGINEER : XX
ORDER # : XX
PROJ # : XX
DATE : XX



LINT INTERCEPTOR
MODEL LTSC 150 THRU 400 GAL

PM	DRN	ENG	DWG. NO.	REV.
DATE	10/16		LTSC-1	A



Typical applications include commercial and industrial laundry service facilities where excessive lint may interfere with the proper drainage of the sewer system. The lint interceptor is generally buried below grade for gravity flow sewer systems. A sample well is utilized on the outlet side for sampling by the local water authority.

Specifications

TANK : The tank shell shall be constructed from reinforced fiberglass in conformance to ASTM-D3299. Tank shall have one-piece construction at shell, end caps, and baffle.

C.I. CASTINGS: Manhole frames, covers or grates are manufactured of grey cast iron conforming to ASTM A48-76 Class 30. Manhole shall be nominal 24 inch diameter and be traffic duty.

LINT INTERCEPTOR SCHEDULE						
MODEL NO.	CAPACITY USGal	EMPTY WT (LBS)	LENGTH L	DIAMETER D	INLET FL1	OUTLET FL2
LTSF-500	500	600	7'-0"	4'-0"	3'-3"	3'-0"
LTSF-750	750	750	9'-0"	4'-0"	3'-3"	3'-0"
LTSF-1000	1,000	900	11'-6"	4'-0"	3'-3"	3'-0"
LTSF-1500	1,500	1,400	8'-6"	6'-0"	5'-3"	5'-0"
LTSF-2000	2,000	1,300	11'-0"	6'-0"	5'-3"	5'-0"
LTSF-2500	2,500	1,400	13'-0"	6'-0"	5'-3"	5'-0"
LTSF-3000	3,000	1,600	16'-0"	6'-0"	5'-3"	5'-0"
LTSF-3000	3,000	1,400	10'-0"	8'-0"	7'-3"	7'-0"
LTSF-4000	4,000	2,200	21'-0"	6'-0"	5'-3"	5'-0"
LTSF-4000	4,000	1,800	13'-0"	8'-0"	7'-3"	7'-0"
LTSF-5000	5,000	2,200	16'-0"	8'-0"	7'-3"	7'-0"
LTSF-6000	6,000	2,600	20'-0"	8'-0"	7'-3"	7'-0"

Engineering Data

The lint interceptor is structurally & hydraulically engineered to conform to regional plumbing codes recommended in most cities. Consult with local authorities for specific application requirements.

Shop drawings shall include complete structural & buoyancy calculations certified by a licensed professional engineer.

Consult with Park Equipment Company for exact excavation dimensions & shipping information.

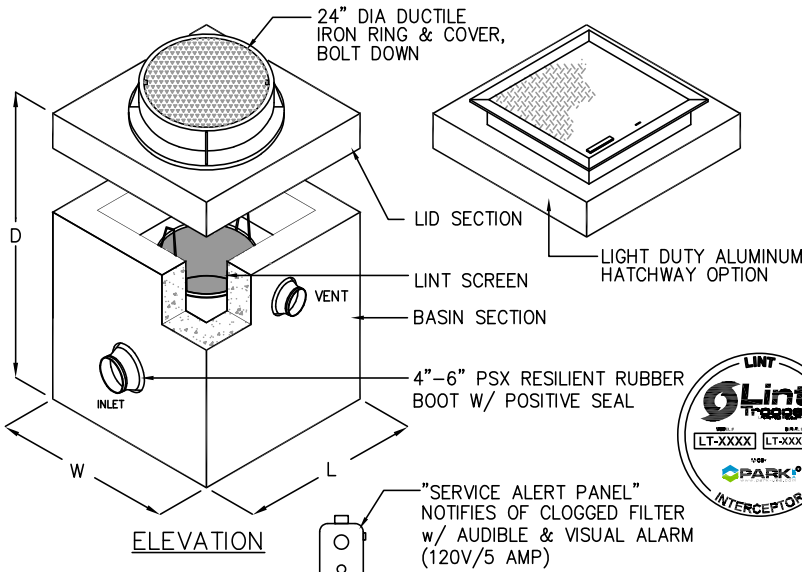


© Park 2012



LINT INTERCEPTOR SERIES LTSF
300 THRU 4,000 GALLON CAPACITY

PM	DRN	CHK	DWG. NO.	LTSF-1	REV.
DATE	06/15				A



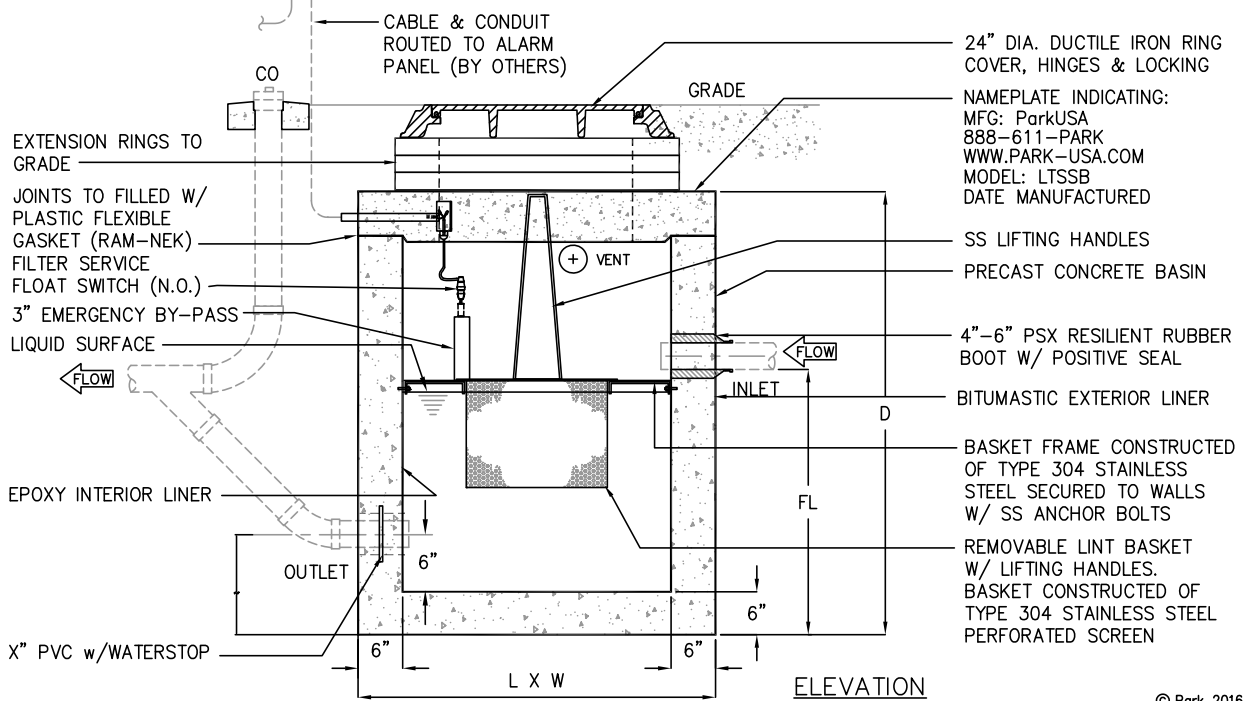
APPLICATIONS

TYPICAL APPLICATIONS FOR THE MODEL LTSSB LINT INTERCEPTOR INCLUDE:

- COMMERCIAL LAUNDRIES & DRY CLEANERS
- SCHOOLS
- APARTMENTS
- CORRECTIONAL INSTITUTIONS
- HOSPITALS
- GENERAL INDUSTRY

LINT INTERCEPTOR SCHEDULE						
MODEL	FLOW GPM	QTY OF WASHERS	DIMENSIONS			
			L	W	FL	D
LTSSB-20	20	2	42	42	30	48
LTSSB-30	30	3	42	42	36	54
LTSSB-50	50	5	42	42	42	60
LTSSB-80	80	8	42	42	45	60
LTSSB-100	100	10	48	48	36	66
LTSSB-150	150	15	48	48	42	66
LTSSB-200	200	20	60	60	36	54
LTSSB-300	300	30	60	60	42	60
LTSSB-400	400	40	60	60	54	72
LTSSB-500	500	50	XX	XX	XX	XX
LTSSB-600	600	60	XX	XX	XX	XX

ALL DIMENSIONS IN INCHES



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Specifications

- CONCRETE :** Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
- REINFORCEMENT:** #4 Grade 60 reinforced with steel rebar conforming to ASTM A615 on 12" O.C.E.W. or equal in bottom, walls, and top.
- D.I. CASTINGS:** Manhole frames, covers or grates are manufactured of ductile iron conforming to ASTM A536, AASHTO M306, & AASHTO M105 Standards. Manhole shall be nominal 24" diameter and be traffic duty.

Engineering Data

Interceptor is structurally and hydraulically engineered conforming to Uniform Plumbing Code. The interceptor shall be factory assembled prior to delivery.

Field excavation and preparation shall be completed prior to delivery of interceptor. Use dimensional data as shown.

PROJECT : _____

CUSTOMER : _____

ARCHITECT : _____

ENGINEER : _____

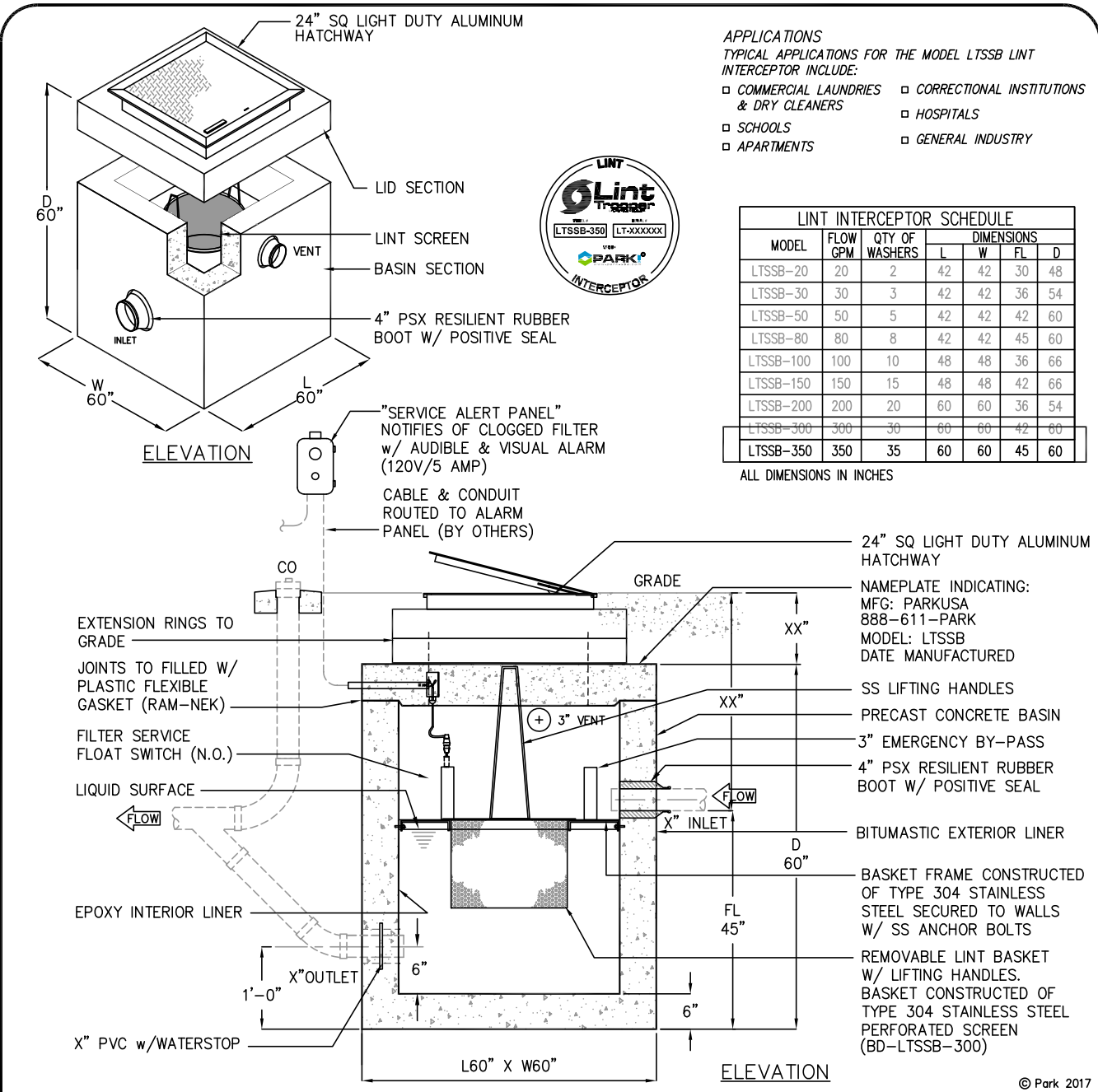
ORDER # : _____

DATE : _____



**LINT INTERCEPTOR
MODEL LTSSB-1**

PM	DRN	CHK	DWG. NO.	REV.



- APPLICATIONS**
TYPICAL APPLICATIONS FOR THE MODEL LTSSB LINT INTERCEPTOR INCLUDE:
- COMMERCIAL LAUNDRIES & DRY CLEANERS
 - SCHOOLS
 - APARTMENTS
 - CORRECTIONAL INSTITUTIONS
 - HOSPITALS
 - GENERAL INDUSTRY

LINT INTERCEPTOR SCHEDULE						
MODEL	FLOW GPM	QTY OF WASHERS	DIMENSIONS			
			L	W	FL	D
LTSSB-20	20	2	42	42	30	48
LTSSB-30	30	3	42	42	36	54
LTSSB-50	50	5	42	42	42	60
LTSSB-80	80	8	42	42	45	60
LTSSB-100	100	10	48	48	36	66
LTSSB-150	150	15	48	48	42	66
LTSSB-200	200	20	60	60	36	54
LTSSB-300	300	30	60	60	42	60
LTSSB-350	350	35	60	60	45	60

ALL DIMENSIONS IN INCHES

© Park 2017

Specifications

- CONCRETE :** Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
- REINFORCEMENT:** #4 Grade 60 reinforced with steel rebar conforming to ASTM A615 on 12" O.C.E.W. or equal in bottom, walls, and top.
- HATCHWAY:** 1/4" Aluminum diamond plate cover, with 1/4" extruded aluminum frame. Hatch to be furnished with 316 Stainless Steel snap lock & brass hinges.

Engineering Data

Interceptor is structurally and hydraulically engineered conforming to Uniform Plumbing Code. The interceptor shall be factory assembled prior to delivery.

Field excavation and preparation shall be completed prior to delivery of interceptor. Use dimensional data as shown.

PROJECT : _____

CUSTOMER : _____

ARCHITECT : _____

ENGINEER : _____

ORDER # : _____

DATE : _____



LINT INTERCEPTOR MODEL LTSSB

LTSSB-350	PM	DRN	ENG	DWG. NO.	REV.
	DATE	09/17			LTSSB-350

Lint TROOPER[®]

Lint Removal System

Features

- Pre-engineered from 500 - 15,000 gallons
- Precast concrete, polyethylene, fiberglass or steel construction
- Above or below grade installation
- Custom screen sizes (down to 100 micron)
- Pedestrian or traffic rated
- Remote maintenance alarm
- Interior liners available
- Meets all building codes



Lint Interceptors

The ParkUSA® LintTrooper® is used in commercial and institutional laundries to remove excessive amounts of lint and silt that may interfere with the proper drainage and treatment of wastewater. Local plumbing codes require installation of a lint interceptor to pretreat the wastewater.

The LintTrooper® is a lint and sediment interceptor that consists of a multi-compartment basin and unique separation technology for lint and sediment separation. Typical applications include commercial/institutional laundries, dry-cleaners, and textile operations. The wastewater discharge from these facilities usually contain high quantities of lint, silt, dissolved and suspended solids, as well as as detergents. The LintTrooper® is compliant with both UPC and IPC plumbing codes, and can be equipped with debris screening technology that prevents string, rags, buttons, and other materials from entering the public sanitary sewer system.



WW | LINTTROOPER
Standard



How it Works

The LintTrooper® is typically located outside the building and buried below grade, where wastewater can exit the laundry via gravity flow and enter the interceptor. The interceptor contains multiple compartments where the lint flocculates and floats to the surface, and heavier solids sink to the bottom. As the wastewater enters the interceptor's first compartment, the water velocity is significantly reduced, allowing for separation and fall-out of the lint and sediment. Water travels into the second compartment through the piping manifold, where further separation occurs. The water exits through an outlet pipe positioned between the floating and settling layers. Neutral buoyant particles are further separated by an internal effluent screen.

The buried interceptor is typically constructed of precast concrete, providing years of continuous service. To ensure maximum performance of the interceptor, a sample well is recommended downstream of the interceptor. As its name implies, water samples can be drawn and lab-tested to determine sediment total suspended solids (TSS) content and interceptor performance.

Visit linttrooper.parkusa.com for more information and design assistance.

To request a quote or catalog, visit request.parkusa.com.

System Components

The ParkUSA LintTrooper® has the main components listed below:

Screen filter: Contained in the model LTSC configuration, the screening filter offers enhanced separation for neutral buoyant particles. Screens are available down to 100 microns. All sediments reside in the interceptor for periodic cleaning by a vacuum truck service company.

Filter baskets: Contained in the model LTSSB configuration, the screening baskets are removable for onsite solid waste disposal of the collected lint and sediment. This allows for maintenance by onsite maintenance personnel.

Control system: Consists of NEMA 4X panel with service notification and internal tank sensor for easy use by the end-user.

Interceptor basin: The shell of the unit can be constructed from precast concrete, fiberglass, or steel. Model names and configurations vary by material.

APPLICATIONS



Good to use
in BMPs



Municipal



Commercial



Industrial



Medical
Facilities

SAND-MUD INTERCEPTOR



PARK USA
A Northwest Pipe Company

ENGINEERING FACTS

GENERAL INFORMATION

Sand-mud interceptors are used in commercial establishments to remove excessive amounts of sand-mud and silt, which may interfere with the proper drainage and treatment of wastewater. Local plumbing codes generally require the installation of a sand mud interceptor prior to discharging into the public sanitary sewer system. Optional debris baskets are available to prevent solids greater than ½ inch in mass from entering public sewer system. Typical applications include vehicle/equipment wash down, maintenance garages, and manufacturing facilities. The waste discharge from these facilities usually contains high inorganic loads, including sand-mud/silt and detergents.

MODELS

The ParkUSA SMC Interceptors are manufactured of Class II, 4500 PSI precast concrete. Pre-casting the concrete shell insures that all units achieve structural and physical uniformity. The units are structurally engineered for H-20 truck loading and can be buried without need for any other structural protection. The unit is of monolithic construction at bottom and walls to insure against joint leakage.

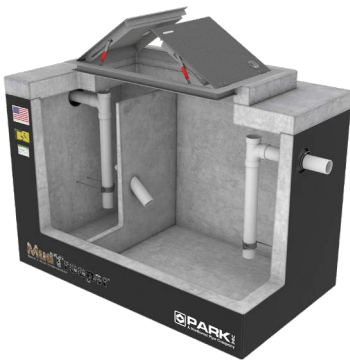
The ParkUSA SMS Series Interceptors are steel units and are recommended for application where the Sand - Mud Interceptor is installed in a freestanding position, i.e., in a basement or on a slab.

The ParkUSA SMF Series Interceptors are manufactured with fiberglass or plastic designs and are used where lightweight construction is required.

Sand-mud interceptors are used in commercial establishments to remove excessive amounts of sand-mud and silt, which may interfere with the proper drainage and treatment of wastewater.

FEATURES

- Sizes from 500 gallons to 20,000 Gallons
- Designed to Meet Local Plumbing Codes
- High Strength Precast Concrete, Steel, or Fiberglass Construction
- Heavy Duty Cast Iron Access Covers or Grates for Vehicular Traffic Loading
- Choices of Interior Protective Coatings and Remote Monitoring



SMC Interceptors



SMS Series Interceptors



SMF Series Interceptors

SYSTEM COMPONENTS

The ParkUSA Sand-Mud Interceptor presents the main components described below:

Stainless-Steel Screen Filter (when required, i.e. STSC): the unit presents a stainless-steel screen filter whose design varies by product model. For the STSC configuration, the filter is a basket device located at the outlet. And for the SSB variation, the screen filter occupies the whole sectional area of the unit, being in a “table” design and the flow going downward.

Sensors: Indicate water level inside unit.

Control Panel: The Control System consists of a panel that receives signal from the high-level sensor, it is programed for easy operation by the end-user.

Containments Vault: The shell of the unit can be constructed from Precast Concrete, Polyethylene, Fiberglass, or Steel. Model names and configurations vary by material.

OPERATION

The purpose of the sand-mud interceptor is to intercept the wastewater and retain it for a sufficient amount of time, which allows for separation of the solids from the water.

The sand-mud interceptor is typically located outside of the building and buried below grade. The buried interceptor is typically constructed of precast concrete, providing years of continuous service. The interceptor is divided into several compartments where solids will sink to the bottom. Clarified effluent discharges into the sanitary sewer, typically through an approved sample well fixture.

DESIGN CONSIDERATIONS

One of the most important features for the successful operation of the sand-mud interceptor is the maintenance program. Regardless of the size or design, an interceptor is only as good as its maintenance program. For this reason, most plumbing codes require the interceptor to be installed and located so that it will be easily accessible for inspection, cleaning, and removal of intercepted waste products. There should be an adequate number of manholes to permit access for cleaning all areas of the interceptor. A manhole should be located near the inlet and the outlet. The manhole should not be less than 20 inches in size. All manholes should extend to grade. The interceptor should be located near the source of the wastewater for the protection of the piping system. The sand-mud interceptor should be buried so as to intercept the building sewer. Inlet and outlet piping shall be a minimum of 4 inches or the size of the building sewer, whichever is greater. Most jurisdictions require a sampling well on the discharging side of the interceptor so that an inspector can verify proper treatment or maintenance.

MAINTENANCE

The frequency of cleaning at any given installation will vary depending on use. Solids Interceptors should be cleaned

(or pumped out) routinely to prevent the escape of appreciable quantities of solids. Solids should be removed before accumulations effectively reduce storage capacity and detention time of the interceptor. A professional pumping company familiar with regulations regarding proper disposal should maintain the interceptor.

SIZING

The sand-mud interceptor is generally sized according to the local plumbing code. A typical method is to determine the total fixture unit loading of the sewer system being serviced by the interceptor. The fixture unit total is converted to flow rate (1 fixture unit = 7.5 GPM). The flow rate is multiplied by the minimum detention time to determine the interceptor capacity.

Example:

A common application is an automobile service garage. The garage has 3 floor drains and 1 service sink, which are to be serviced by a sand-mud interceptor. The total fixture unit loading is:

$$3(2 \text{ f.u.}) + 1(3 \text{ f.u.}) = 9 \text{ fixture units}$$

and

$$9 \text{ fixture units} \times 7.5 \text{ GPM} = 67.5 \text{ GPM}$$

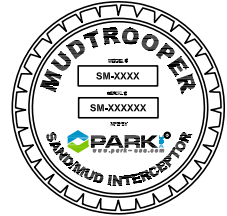
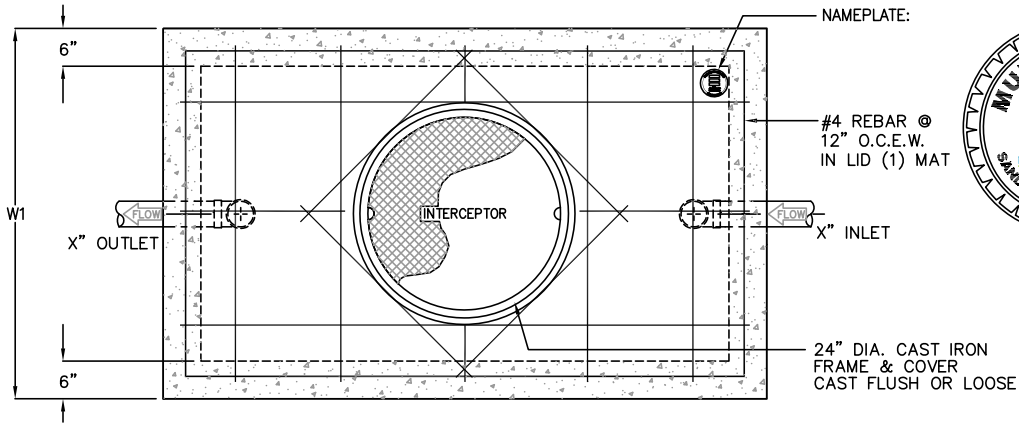
Once the maximum flow rate (GPM) is determined, it is multiplied by the desired detention time of the wastewater within the interceptor. Generally, a detention time of 30 minutes is sufficient. Therefore, a flow rate of 67.5 GPM will require an interceptor of:

$$67.5 \text{ GPM} \times 30 \text{ Minutes} = 2,025 \text{ Gallons}$$

The Park Equipment Company Model SM-2500 is specified.

Sand-Mud Interceptor Model Sizes Available

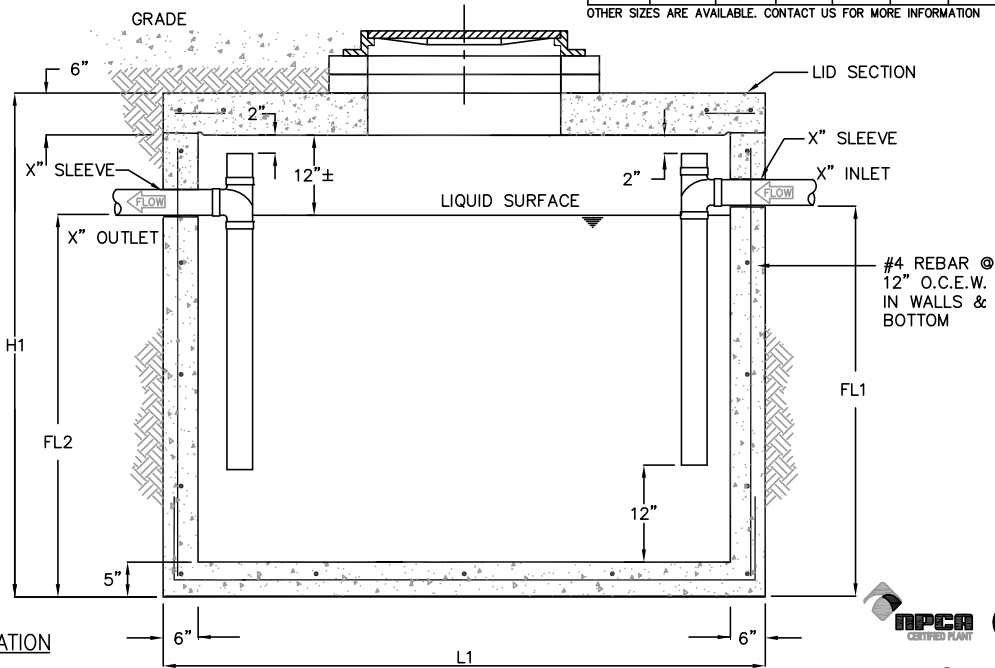
MODEL NUMBER	STANDARD SIZE LENGTH X WIDTH	NOMINAL FLOWRATE (GPM)	INTERCEPTOR VOLUME (GAL)	SOLIDS CAPACITY (CU FT)
SM-500	7'-10" X 4'-4"	50	50	20
SM-750	7'-10" X 4'-4"	75	750	30
SM-1000	8'-8" X 5'-4"	100	1,000	40
SM-1500	9'-0" X 6'-0"	150	1,500	60
SM-2000	9'-0" X 6'-0"	200	2,000	80
SM-3000	12'-0" X 6'-0"	300	3,000	120
SM-4000	15'-0" X 7'-6"	400	4,000	160
SM-5000	15'-0" X 7'-6"	500	5,000	200
SM-6000	15'-0" X 7'-6"	600	6,000	280
SM-7000	18'-9" X 9'-0"	700	7,000	240
SM-8000	18'-9" X 9'-0"	800	8,000	320
SM-9000	18'-9" X 9'-0"	900	9,000	360
SM-10000	18'-9" X 9'-0"	1,000	10,000	400
SM-12000	21'-2" X 11'-2"	1,200	12,000	480
SM-15000	21'-2" X 11'-2"	1,500	15,000	600



PLAN VIEW

SAND/MUD INTERCEPTOR SCHEDULE							
MODEL NO.	CAPACITY USGal	EMPTY WT (LBS)	LENGTH L1	WIDTH W1	HEIGHT H1	INLET FL1	OUTLET FL2
SM-50	50	4,000	3'-1"	3'-1"	3'-6"	2'-3"	2'-0"
SM-100	100	4,500	3'-1"	3'-1"	5'-0"	3'-4"	3'-1"
SM-150	150	5,000	3'-6"	3'-6"	5'-0"	3'-6"	3'-3"
SM-200	200	7,200	6'-0"	3'-6"	4'-6"	2'-11"	2'-8"
SM-250	250	7,800	6'-0"	3'-6"	5'-0"	3'-5"	3'-2"
SM-300	300	8,400	6'-0"	4'-0"	5'-0"	3'-5"	3'-2"
SM-350	350	9,000	6'-0"	4'-0"	5'-6"	3'-11"	3'-8"

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION



ELEVATION



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SPECIFICATIONS

- CONCRETE : CLASS 1/II CONCRETE WITH DESIGN STRENGTH OF 5000 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.
- REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS: MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED OF DUCTILE IRON CONFORMING TO ASTM A536, AASHTO M306, & AASHTO M105 STANDARDS. MANHOLE SHALL BE NOMINAL 24" DIAMETER AND BE TRAFFIC DUTY.

ENGINEERING DATA

INTERCEPTOR IS STRUCTURALLY AND HYDRAULICALLY ENGINEERED CONFORMING TO UNIFORM PLUMBING CODE. NOMINAL TOTAL LIQUID CAPACITY AS INDICATED.

FIELD EXCAVATION AND PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF INTERCEPTOR. USE DIMENSIONAL DATA AS SHOWN.

PROJECT : .

CUSTOMER : .

ENGINEER : .

ORDER # : .

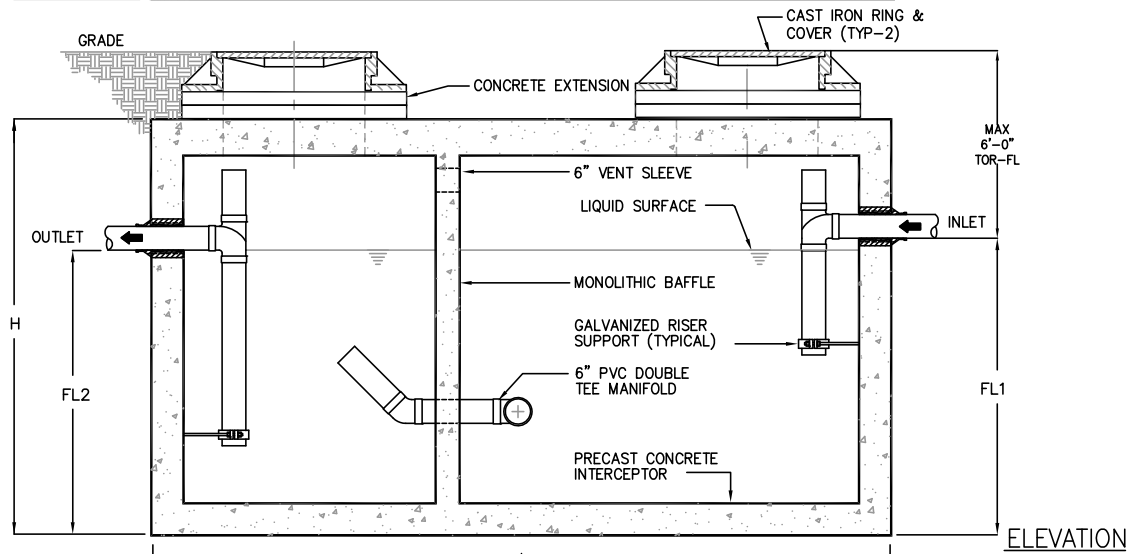
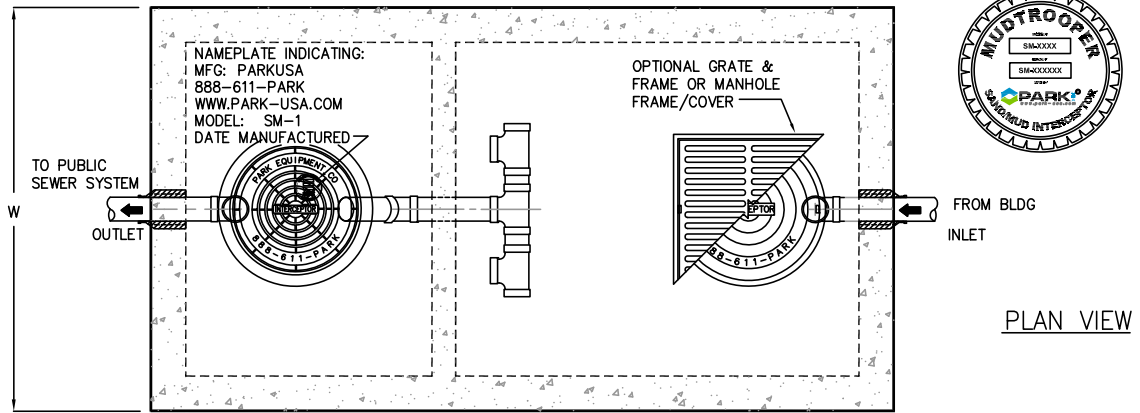
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DATE : .

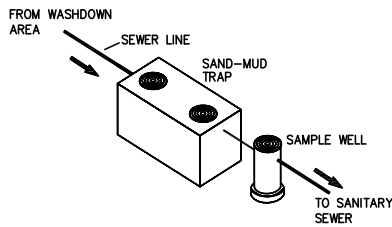


SAND/MUD INTERCEPTOR
MODEL SM 50 THROUGH 350

PM .	DRN .	ENG .	DWG. NO.	REV.
DATE	06/18		SM-0	A



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TYPICAL APPLICATIONS INCLUDE COMMERCIAL AND INDUSTRIAL LAUNDRY FACILITIES WHERE EXCESSIVE SAND & MUD MAY INTERFERE WITH THE PROPER DRAINAGE OF THE SEWER SYSTEM. THE SAND-MUD INTERCEPTOR IS GENERALLY BURIED BELOW GRADE FOR GRAVITY FLOW SEWER SYSTEMS. A SAMPLE WELL IS UTILIZED ON THE OUTLET SIDE FOR SAMPLING BY THE LOCAL WATER AUTHORITY.

SPECIFICATIONS

- CONCRETE:** CLASS I/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR, FIRST STAGE OF WALL AND BAFFLE WITH SECTIONAL RISER TO REQUIRED DEPTH. (MONOLITHIC BAFFLE REQUIRED, SLIDE-IN TYPE IS NOT ACCEPTABLE)
- REINFORCEMENT:** GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS:** MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48 CLASS 30. MANHOLE SHALL BE NOMINAL 24 INCH DIAMETER AND BE TRAFFIC DUTY.

SAND-MUD INTERCEPTOR SCHEDULE

MODEL NO.	CAPACITY USGal	EMPTY WT (LBS)	LENGTH L	WIDTH W	HEIGHT H	INLET FL1	OUTLET FL2
SM-500	500	9,500	7'-10"	4'-4"	4'-6"	3'-3"	3'-0"
SM-750	750	9,900	7'-10"	4'-4"	6'-0"	4'-5"	4'-2"
SM-1000	1,000	13,350	8'-8"	5'-0"	6'-0"	4'-9"	4'-6"
SM-1250	1,250	14,650	9'-2"	5'-8"	6'-0"	4'-9"	4'-6"
SM-1500	1,500	16,050	9'-2"	5'-8"	7'-0"	5'-9"	5'-6"
SM-2000	2,000	21,250	9'-0"	6'-0"	8'-0"	6'-9"	6'-6"
SM-2500	2,500	27,050	13'-0"	7'-0"	7'-0"	5'-9"	5'-6"
SM-3000	3,000	33,150	13'-0"	7'-0"	8'-0"	6'-9"	6'-6"
SM-3500	3,500	38,550	13'-0"	7'-0"	8'-6"	7'-3"	7'-0"
SM-4000	4,000	38,100	16'-0"	8'-6"	7'-0"	5'-9"	5'-6"

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION

ENGINEERING DATA

THE SAND & MUD INTERCEPTOR IS STRUCTURALLY & HYDRAULICALLY ENGINEERED TO CONFORM TO REGIONAL PLUMBING CODES RECOMMENDED IN MOST CITIES. CONSULT WITH LOCAL AUTHORITIES FOR SPECIFIC APPLICATION REQUIREMENTS.

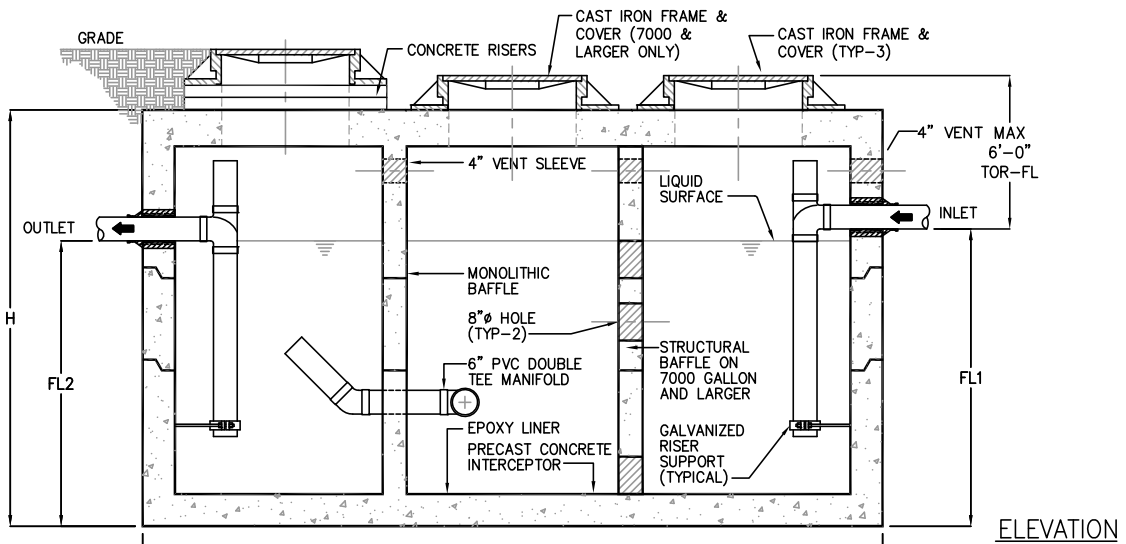
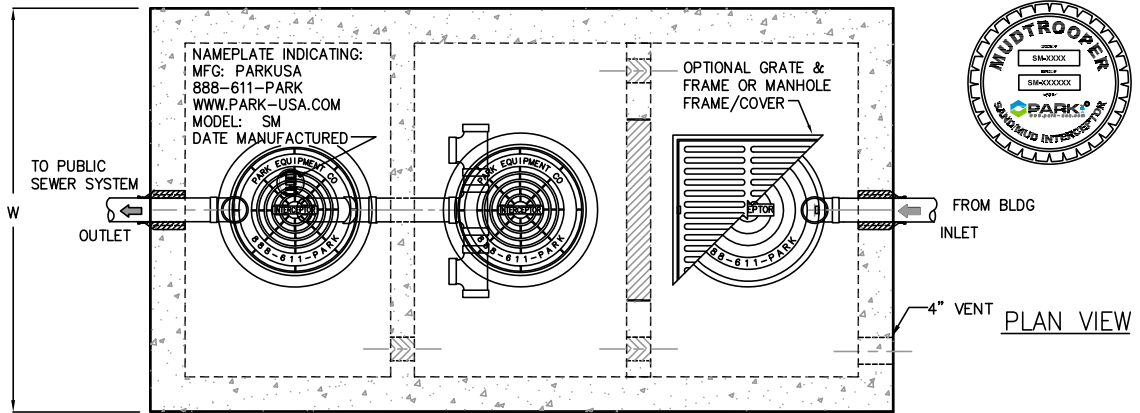
SHOP DRAWINGS SHALL INCLUDE COMPLETE STRUCTURAL & BOUYANCY CALCULATIONS CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER UPON REQUEST.

CONSULT WITH PARK ENVIRONMENTAL FOR EXACT EXCAVATION DIMENSIONS & SHIPPING INFORMATION.

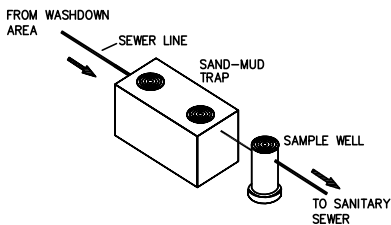


SAND-MUD INTERCEPTOR
MODEL SM - 500 THRU 4000 GALLONS

PM	DRN	ENG	DWG. NO.	REV.
DATE	06/18		SM-1	A



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TYPICAL APPLICATIONS INCLUDE COMMERCIAL AND INDUSTRIAL LAUNDRY FACILITIES WHERE EXCESSIVE SAND & MUD MAY INTERFERE WITH THE PROPER DRAINAGE OF THE SEWER SYSTEM. THE SAND-MUD INTERCEPTOR IS GENERALLY BURIED BELOW GRADE FOR GRAVITY FLOW SEWER SYSTEMS. A SAMPLE WELL IS UTILIZED ON THE OUTLET SIDE FOR SAMPLING BY THE LOCAL WATER AUTHORITY.

SPECIFICATIONS

- CONCRETE :** CLASS 1/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR, FIRST STAGE OF WALL AND BAFFLE WITH SECTIONAL RISER TO REQUIRED DEPTH. (MONOLITHIC BAFFLE REQUIRED, SLIDE-IN TYPE IS NOT ACCEPTABLE)
- REINFORCEMENT:** GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS:** MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48 CLASS 30. MANHOLE SHALL BE NOMINAL 24 INCH DIAMETER AND BE TRAFFIC DUTY.

SAND-MUD INTERCEPTOR SCHEDULE							
MODEL NO.	CAPACITY USGal	EMPTY WT (LBS)	LENGTH L	WIDTH W	HEIGHT H	INLET FL1	OUTLET FL2
SM-5000	5,000	41,550	16'-0"	8'-6"	8'-0"	6'-9"	6'-6"
SM-6000	6,000	44,700	16'-0"	8'-6"	9'-0"	7'-9"	7'-6"
SM-7000	7,000	59,908	18'-0"	9'-0"	9'-2"	7'-11"	7'-8"
SM-8000	8,000	65,018	18'-0"	9'-0"	10'-0"	8'-9"	8'-6"
SM-9000	9,000	69,116	18'-0"	9'-0"	10'-10"	9'-7"	9'-4"
SM-10000	10,000	85,760	21'-2"	11'-2"	8'-8"	7'-5"	7'-2"
SM-11000	11,000	89,950	21'-2"	11'-2"	9'-6"	8'-3"	8'-0"
SM-12000	12,000	93,280	21'-2"	11'-2"	10'-0"	8'-9"	8'-6"
SM-13000	13,000	97,960	21'-2"	11'-2"	10'-6"	9'-3"	9'-0"
SM-14000	14,000	101,040	21'-2"	11'-2"	11'-2"	9'-11"	9'-8"
SM-15000	15,000	107,700	21'-2"	11'-2"	12'-2"	10'-11"	10'-8"

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION

ENGINEERING DATA

THE SAND & MUD INTERCEPTOR IS STRUCTURALLY & HYDRAULICALLY ENGINEERED TO CONFORM TO REGIONAL PLUMBING CODES RECOMMENDED IN MOST CITIES. CONSULT WITH LOCAL AUTHORITIES FOR SPECIFIC APPLICATION REQUIREMENTS.

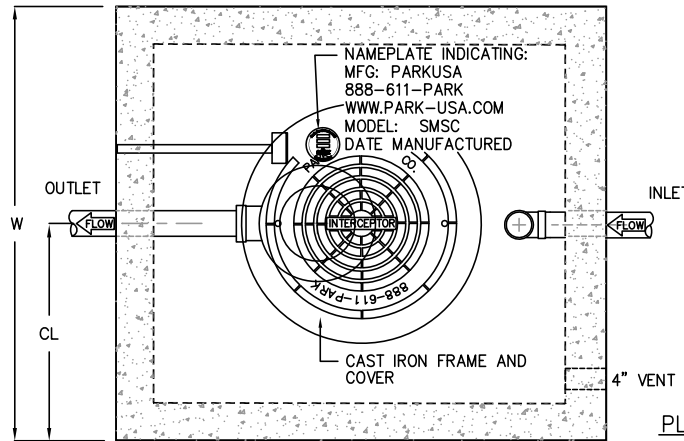
SHOP DRAWINGS SHALL INCLUDE COMPLETE STRUCTURAL & BOUYANCY CALCULATIONS CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER UPON REQUEST.

CONSULT WITH PARK ENVIRONMENTAL FOR EXACT EXCAVATION DIMENSIONS & SHIPPING INFORMATION.



SAND-MUD INTERCEPTOR
MODEL SM - 5000 THRU 15000 GALLONS

PM	DRN	CHK	DWG. NO.	REV.
DATE	10/19		SM-2	A



GENERAL INFORMATION

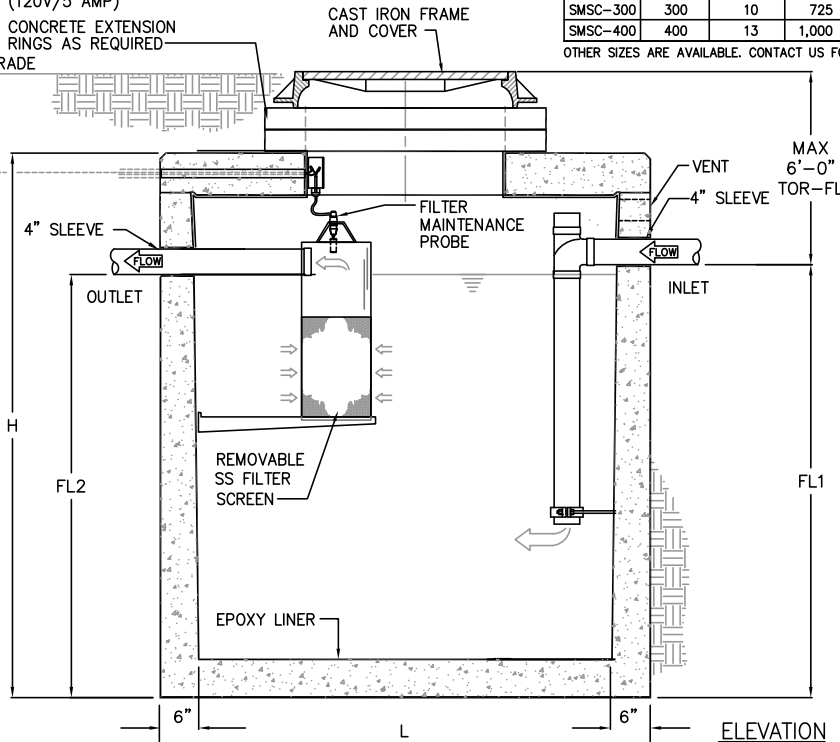
THE SMSC SAND/MUD INTERCEPTOR IS USED TO PREVENT POTENTIALLY HARMFUL DEBRIS FROM ENTERING INTO THE PUBLIC SANITARY SEWER. THE MULTI-CHAMBER TANK SEPARATES & COLLECTS THE DEBRIS FROM THE WASTEWATER. AN EFFLUENT SCREEN POLISHES THE WASTEWATER PRIOR TO ENTERING THE PUBLIC SEWER. A SERVICE ALERT SYSTEM WILL INDICATE WHEN SERVICE IS NEEDED. EASY MAINTENANCE IS PERFORMED BY PUMPING OUT THE UNIT BY A PROFESSIONAL WASTE DISPOSAL SERVICE. THE EFFLUENT SCREEN CAN BE REMOVED & CLEANED AS REQUIRED.

PLAN VIEW

SOLIDS INTERCEPTOR SCHEDULE									
MODEL NO.	CAPACITY USGal	FLOW RATE GPM	SOLIDS CAP (LBS)	LENGTH L	WIDTH W	HEIGHT H	INLET FL1	OUTLET FL2	
SMSC-150	150	5	360	3'-6"	3'-6"	5'-5"	4'-0"	3'-9"	
SMSC-200	200	7	480	5'-0"	5'-0"	4'-2"	3'-1"	2'-10"	
SMSC-300	300	10	725	5'-0"	5'-0"	4'-8"	3'-3"	3'-0"	
SMSC-400	400	13	1,000	5'-0"	5'-0"	5'-5"	4'-0"	3'-9"	

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION

"SERVICE ALERT PANEL"
NOTIFIES OF CLOGGED FILTER
w/ AUDIBLE & VISUAL ALARM
(120V/5 AMP)
CONCRETE EXTENSION
RINGS AS REQUIRED
GRADE



APPLICATIONS

- AGRABUSINESS
- LIVESTOCK/BARN
- MANUFACTURING AREAS
- MANUFACTURING FACILITY EFFLUENT WATER

ELEVATION

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SPECIFICATIONS

CONCRETE : CLASS I/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR, FIRST STAGE OF WALL AND BAFFLE WITH SECTIONAL RISER TO REQUIRED DEPTH. GROSS EMPTY WEIGHT OF APPROXIMATELY INDICATED.

REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL. STRUCTURAL DESIGN IS BASED ON AASHTO HS20 LOADING.

C.I. CASTINGS: MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48 CLASS 30. MANHOLE SHALL HAVE 24 INCH INSIDE DIAMETER AND BE TRAFFIC DUTY.

ENGINEERING DATA

INTERCEPTOR IS STRUCTURALLY AND HYDRAULICALLY ENGINEERED CONFORMING TO UPC/IPC PLUMBING CODES. NOMINAL LIQUID CAPACITY AS INDICATED.

MANUFACTURER SHALL PROVIDE BUOYANCY CALCULATIONS CERTIFIED BY A LICENSED ENGINEER UPON REQUEST. FIELD EXCAVATION AND PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF INTERCEPTOR. USE DIMENSIONAL DATA AS SHOWN.

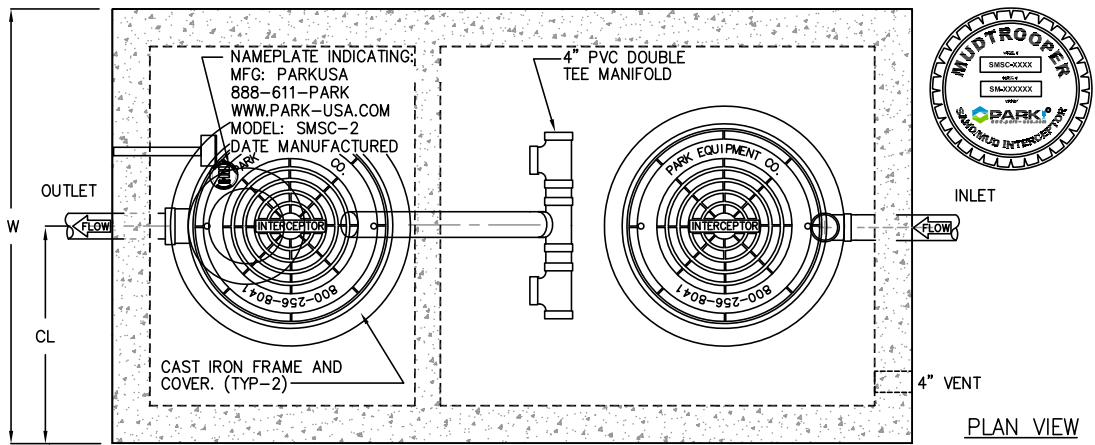
PROJECT : XX
CUSTOMER : XX
ENGINEER : XX
ORDER # : XX
PROJ # : XX
DATE : XX



**SAND/MUD INTERCEPTOR w/SCREEN
MODEL SMSC - 150 THRU 400 GALLONS**

PM	DRN	CHK	DWG. NO.	REV.
DATE	10/19		SMSC-1	A

- APPLICATIONS**
- AGRABUSINESS
 - LIVESTOCK/BARN
 - MANUFACTURING AREAS
 - MANUFACTURING FACILITY EFFLUENT WATER

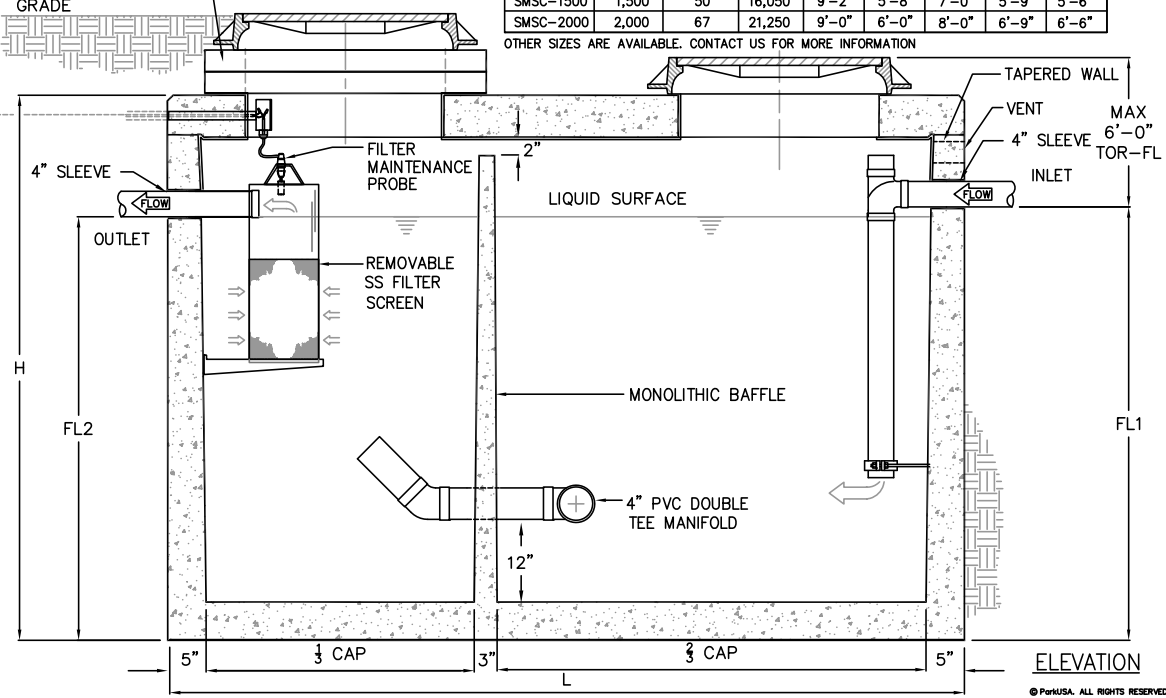


PLAN VIEW

SOLIDS INTERCEPTOR SCHEDULE								
MODEL NO.	CAPACITY USGal	FLOW RATE GPM	EMPTY WT (LBS)	LENGTH L	WIDTH W	HEIGHT H	INLET FL1	OUTLET FL2
SMSC-500	500	17	9,500	7'-10"	4'-4"	4'-6"	3'-3"	3'-0"
SMSC-750	750	25	9,900	7'-10"	4'-4"	6'-0"	4'-5"	4'-2"
SMSC-1000	1,000	33	13,350	8'-8"	5'-0"	6'-0"	4'-9"	4'-6"
SMSC-1250	1,250	41	14,650	9'-2"	5'-8"	6'-0"	4'-9"	4'-6"
SMSC-1500	1,500	50	16,050	9'-2"	5'-8"	7'-0"	5'-9"	5'-6"
SMSC-2000	2,000	67	21,250	9'-0"	6'-0"	8'-0"	6'-9"	6'-6"

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION

"SERVICE ALERT PANEL" NOTICES OF CLOGGED FILTER w/ AUDIBLE & VISUAL ALARM (120V/5 AMP)
CONCRETE EXTENSION RINGS AS REQUIRED GRADE



ELEVATION



SPECIFICATIONS

CONCRETE : CLASS I/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR, FIRST STAGE OF WALL AND BAFFLE WITH SECTIONAL RISER TO REQUIRED DEPTH. GROSS EMPTY WEIGHT OF APPROXIMATELY INDICATED.

REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL. STRUCTURAL DESIGN IS BASED ON AASHTO HS20 LOADING.

C.I. CASTINGS: MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48 CLASS 30. MANHOLE SHALL HAVE 24 INCH INSIDE DIAMETER AND BE TRAFFIC DUTY.

Engineering Data
INTERCEPTOR IS STRUCTURALLY AND HYDRAULICALLY ENGINEERED CONFORMING TO UPC/IPC PLUMBING CODES. NOMINAL LIQUID CAPACITY AS INDICATED.

MANUFACTURER SHALL PROVIDE BUOYANCY CALCULATIONS CERTIFIED BY A LICENSED ENGINEER UPON REQUEST. FIELD EXCAVATION AND PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF INTERCEPTOR. USE DIMENSIONAL DATA AS SHOWN.

PROJECT :	XX
CUSTOMER :	XX
ENGINEER :	XX
ORDER # :	XX
PROJ # :	XX
DATE :	XX

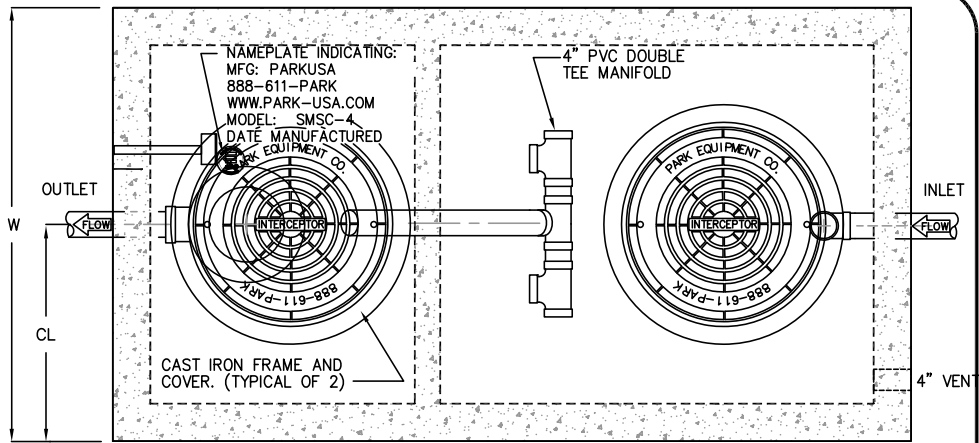


SAND/MUD INTERCEPTOR w/SCREEN
MODEL SMSC - 500 THRU 2000 GALLONS

PM	DRN	CHK	DWG. NO.	REV.
DATE	10/19		SMSC-2	A

GENERAL INFORMATION

THE SMSC SAND/MUD INTERCEPTOR IS USED TO PREVENT POTENTIALLY HARMFUL DEBRIS FROM ENTERING INTO THE PUBLIC SANITARY SEWER. THE MULTI-CHAMBER TANK SEPARATES & COLLECTS THE DEBRIS FROM THE WASTEWATER. AN EFFLUENT SCREEN POLISHES THE WASTEWATER PRIOR TO ENTERING THE PUBLIC SEWER. A SERVICE ALERT SYSTEM WILL INDICATE WHEN SERVICE IS NEEDED. EASY MAINTENANCE IS PERFORMED BY PUMPING OUT THE UNIT BY A PROFESSIONAL WASTE DISPOSAL SERVICE. THE EFFLUENT SCREEN CAN BE REMOVED & CLEANED AS REQUIRED.

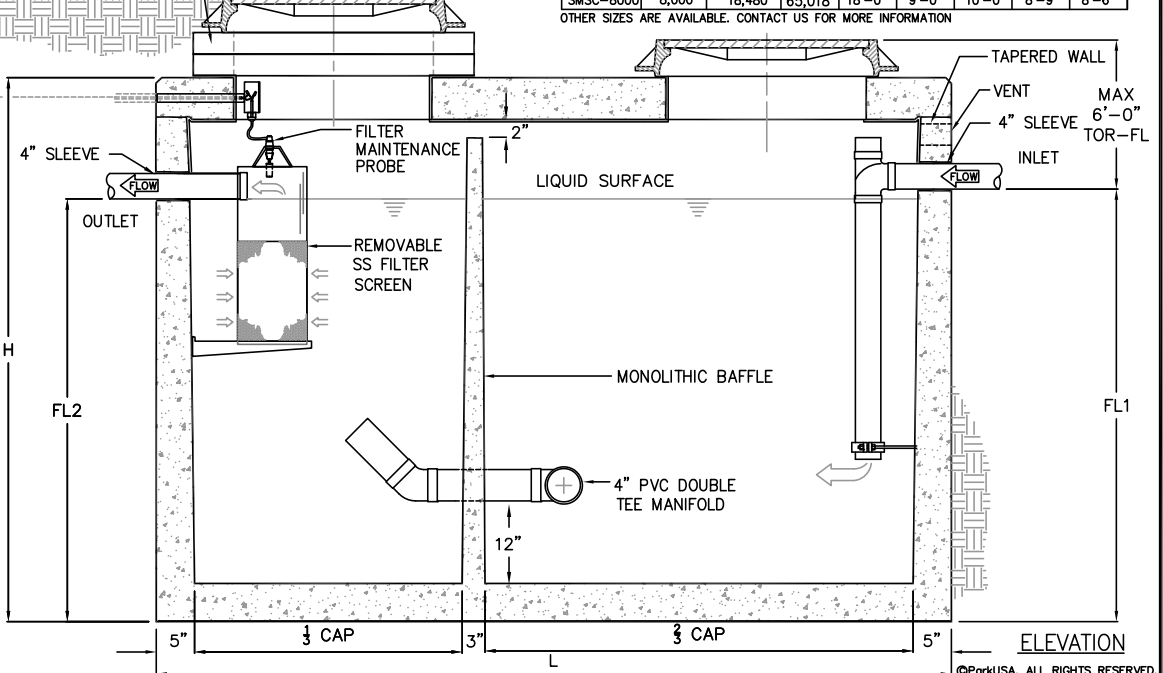


PLAN VIEW

SOLIDS INTERCEPTOR SCHEDULE								
MODEL NO.	CAPACITY USGal	GREASE CAP. (LBS)	EMPTY WT (LBS)	LENGTH L	WIDTH W	HEIGHT H	INLET FL1	OUTLET FL2
SMSC-3000	3,000	6,900	33,150	13'-0"	7'-0"	8'-0"	6'-9"	6'-6"
SMSC-4000	4,000	9,300	38,100	16'-0"	8'-6"	7'-0"	5'-9"	5'-6"
SMSC-5000	5,000	11,600	41,550	16'-0"	8'-6"	8'-0"	6'-9"	6'-6"
SMSC-6000	6,000	13,860	44,700	16'-0"	8'-6"	9'-0"	7'-9"	7'-6"
SMSC-7000	7,000	16,200	59,908	18'-0"	9'-0"	9'-2"	7'-11"	7'-8"
SMSC-8000	8,000	18,480	65,018	18'-0"	9'-0"	10'-0"	8'-9"	8'-6"

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION

"SERVICE ALERT PANEL"
NOTIFIES OF CLOGGED FILTER
w/ AUDIBLE & VISUAL ALARM
(120V/5 AMP)
CONCRETE EXTENSION
RINGS AS REQUIRED
GRADE



ELEVATION

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SPECIFICATIONS

CONCRETE : CLASS I/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR, FIRST STAGE OF WALL AND BAFFLE WITH SECTIONAL RISER TO REQUIRED DEPTH. GROSS EMPTY WEIGHT OF APPROXIMATELY INDICATED.

REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL. STRUCTURAL DESIGN IS BASED ON AASHTO HS20 LOADING.

C.I. CASTINGS: MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48 CLASS 30. MANHOLE SHALL HAVE 24 INCH INSIDE DIAMETER AND BE TRAFFIC DUTY.

ENGINEERING DATA

INTERCEPTOR IS STRUCTURALLY AND HYDRAULICALLY ENGINEERED CONFORMING TO UPC/IPC PLUMBING CODES. NOMINAL LIQUID CAPACITY AS INDICATED.

MANUFACTURER SHALL PROVIDE BUOYANCY CALCULATIONS CERTIFIED BY A LICENSED ENGINEER UPON REQUEST. FIELD EXCAVATION AND PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF INTERCEPTOR. USE DIMENSIONAL DATA AS SHOWN.

PROJECT :	XX
CUSTOMER :	XX
ENGINEER :	XX
ORDER # :	XX
PROJ # :	XX
DATE :	XX



**SAND/MUD INTERCEPTOR w/SCREEN
MODEL SMSC - 3,000 THRU 8,000 GALLONS**

PM	DRN	CHK	DWG. NO.	REV.
DATE	10/19		SMSC-4	A



MudTrooper[®] Sand / Mud Interceptor

Features

- Sizes from 500 gallons to 20,000 gallons
- Designed to meet local plumbing codes
- High strength precast concrete, steel, or fiberglass construction
- Easy maintenance
- Heavy duty cast iron access covers or grates for vehicular traffic loading
- Choices of interior protective coatings and remote monitoring

Sand-mud Interceptor Systems

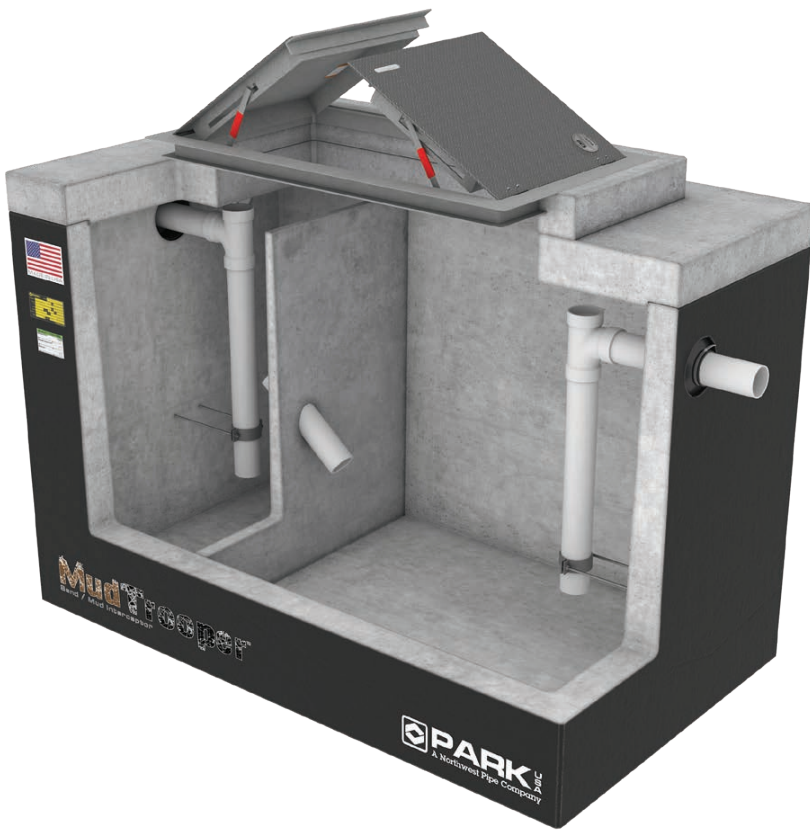
The ParkUSA® MudTrooper® is a sand-mud interceptor that consists of a multi-compartment basin for sediment separation.

Wastewater that contains significant amounts of solids that interfere with the proper drainage and treatment of effluent water must be treated before being discharged into the sanitary sewer system. To comply with effluent water quality standards of the EPA Clean Water Act and local plumbing codes, a sand-mud interceptor for wastewater pretreatment is recommended.

Typical applications include vehicle/ equipment wash down, maintenance garages, and manufacturing facilities. The waste discharge from these facilities usually contain high inorganic loads, including sand-mud/silt and detergents.



WW | MUDTROOPER
Standard



System Components

The ParkUSA® MudTrooper™ may include the following components:

- Precast concrete, fiberglass, or stainless steel construction
- Interior liners include epoxy, high density polyethylene, and stainless steel
- Maintenance alarm system
- Traffic duty and gas-tight access covers
- Free-standing and direct-bury configurations
- Screens for large debris
- Sample well for sampling effluent

How it Works

The purpose of the sand-mud interceptor is to intercept wastewater and retain it for a sufficient amount of time, which allows for separation of the solids from the water.

The sand-mud interceptor is typically located outside of the building or washrack and buried below grade. The buried interceptor is constructed of precast concrete, providing years of continuous service. The interceptor is divided into several compartments where solids will sink to the bottom, and floatables rise to the surface. Clarified effluent discharges into the sanitary sewer, typically through an approved sample well fixture.

Over time, solids will accumulate in the sand-mud interceptor. A routine cleaning schedule will ensure maximum performance of the interceptor.

Visit mudtrooper.parkusa.com for more information and design assistance including sizing and System Components specifications.

To request a quote or catalog, visit request.parkusa.com.

APPLICATIONS



Good to use
in BMPs



Battery
Storage



Stormwater
BMPs



Industrial

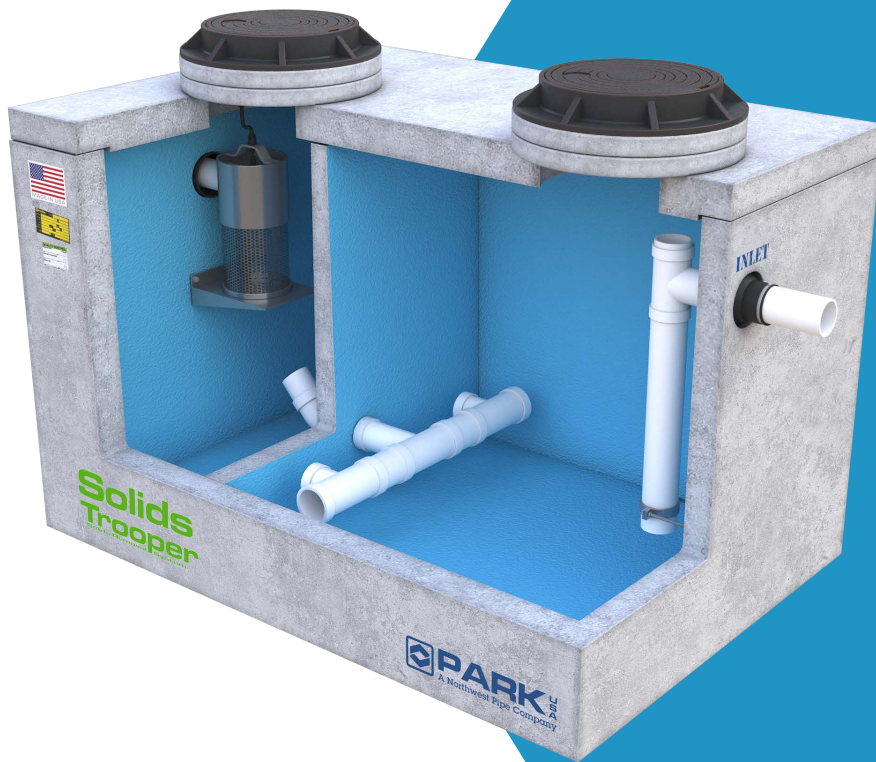


Wash
Racks



Auto Parts
Salvage Yards

SOLIDS INTERCEPTOR



PARK USA
A Northwest Pipe Company

ENGINEERING FACTS

GENERAL INFORMATION

Solids Interceptors are used in commercial establishments to collect and hold excessive amounts of solids substances found in wastewater. A solids interceptor should be installed in areas, as determined by the Authority Having Jurisdiction (AHJ), where pretreatment of waste streams is necessary. Some AHJs require the addition of screens or baskets that prevent solids greater than ½ inch in diameter from entering the sanitary sewer system. Typical applications for Solids Interceptors include food processing, zoos, ag barns, healthcare, glass bottlers, dumpster areas and manufacturing facilities. Waste discharge loadings from these facilities contain solids substances like waste grindings, potato peels, rice, aquarium gravel, animal solids, glass, trash, dental waste, jewels, plaster, hair, ceramic waste, fish bones and meat trimmings.

MODELS

Model STSC Solids Interceptor: The ParkUSA Model STSC Solids Interceptor is a wastewater lint separator featuring one and two compartments, each accessible via 24-inch diameter manways. A reusable & removable stainless-steel screen filter is contained in the effluent compartment to prevent solids from exiting into the public sewer system. All solids are detained inside the separator for removal by a waste disposal service. The separator can detain a large quantity of solid debris separator over extended amount of time. The Model STSC Solids Interceptor is ideal for project applications that have no onsite maintenance personnel and maintained on an infrequent basis.

Model SSB Solids Interceptor: The ParkUSA Model SSB Solids Interceptor is a wastewater solids separator featuring a compact design with a single compartment accessible via a 24-inch diameter manway. A removable & cleanable stainless-steel screen filter basket is contained within the compartment to screen and detain solids from the wastewater before the fluid exits into the public sewer system. The solids are removed and disposed of by removing the basket filter and emptying into a solid waste receptacle. After cleaning, the screen filter is placed back into the separator and placed back into service. The Model SSB Solids Interceptor is designed for project applications that have onsite maintenance personnel, who can service the unit on a routine basis.

Model ZT (Zoo Trooper) Solids Interceptor: The ParkUSA Model ZT Solids Interceptor is a wastewater solids separator especially designed for animal habitats. The ZT unit features a compact design with a single compartment accessible via a 24-inch diameter manway. Removable & cleanable stainless-steel screen filter baskets are contained within the compartment to screen and detain solids from the wastewater before exiting into the public sewer system. The solids are removed and disposed of by removing the basket filter and emptying into a solid waste receptacle or compost pile. After cleaning, the screen filters are placed back into the separator and put back into service. The Model ZT Solids Interceptor is designed for project applications that have onsite maintenance personnel, who can service the unit on a routine basis.



STSC Solids Interceptor



ZooTrooper



SSB Solids Interceptor

Solids Interceptors are used in commercial establishments to collect and hold excessive amounts of solids substances found in wastewater. A solids interceptor should be installed in areas, as determined by the Authority Having Jurisdiction (AHJ), where pretreatment of waste streams is necessary.

FEATURES

- Pre-Engineered from 500-15,000 Gallons Available
- Precast Concrete, Polyethylene, Fiberglass or Steel Construction
- Above or Below Grade Installation
- Pedestrian or Traffic Rated
- Remote Maintenance Alarm
- Interior Liners Available
- Meets all Building Codes

SYSTEM COMPONENTS

The ParkUSA Solids Interceptor presents the main components described below:

Stainless-Steel Screen Filter: the unit presents a stainless-steel screen filter whose design varies by product model. For the STSC configuration, the filter is a basket device located at the outlet. And for the SSB variation, the screen filter occupies the whole sectional area of the unit, being in a "table" design and the flow going downward.

Sensors: Indicate water level inside unit.

Control Panel: The Control System consists of a panel that receives signal from the high-level sensor, it is programed for easy use for the end-user.

Containments Vault: The shell of the unit can be constructed from Precast Concrete, Polyethylene, Fiberglass, or Steel. Model names and configurations vary by material.

OPERATION

The purpose of the Solids Interceptor is to receive the wastewater and retain it for a sufficient amount of time, which allows for separation of the solids from the water. The interceptor is divided into several compartments. During retention, heavy solids will sink to the bottom while lighter solids rise to top. Clarified effluent discharges into the sanitary sewer, typically through an approved sample well fixture.

Solids Interceptors are typically located outside of the building and buried below grade, but may be located indoors or outdoors, and installed aboveground. ParkUSA Solids Interceptors are constructed of precast concrete, steel, or composite providing years of continuous service. Optional stainless-steel filter screens or baskets are available for maximum collection of debris.

DESIGN CONSIDERATIONS

One of the most important features for the successful operation of the solids interceptor is the maintenance program. Regardless of the size or design, an interceptor is only as good as its maintenance program. For this reason, most plumbing codes require the interceptor be installed and located so that it will be easily accessible for inspection, cleaning and removal of collected waste products. There should be an adequate number of manholes to permit access for cleaning all areas of the interceptor. A manhole should be located near the inlet and the outlet. The manhole should not be less than 20 inches in size. All manholes should extend to grade. The interceptor should be located near the source of the wastewater for the protection of the piping system. Inlet and outlet piping shall be a minimum of 3 inches or the size of the building sewer, whichever is greater. Most jurisdictions require a sampling well on the discharge side of the interceptor so that an inspector can verify proper treatment or maintenance.

MAINTENANCE

The frequency of cleaning at any given installation will vary depending on use. Solids Interceptors should be cleaned (or pumped out) routinely to prevent the escape of appreciable quantities of solids. Solids should be removed before accumulations effectively reduce storage capacity and detention time of the interceptor. A professional pumping company familiar with regulations regarding proper disposal should maintain the interceptor.

SIZING

Always check with the local plumbing authority for sizing of solids interceptors. There are many variables that determine the Best Management Practice for sizing. Most important is the type of solids discharging into the system. The discharge type and application determines the sizing method and retention time. The following page lists the current sizes available.

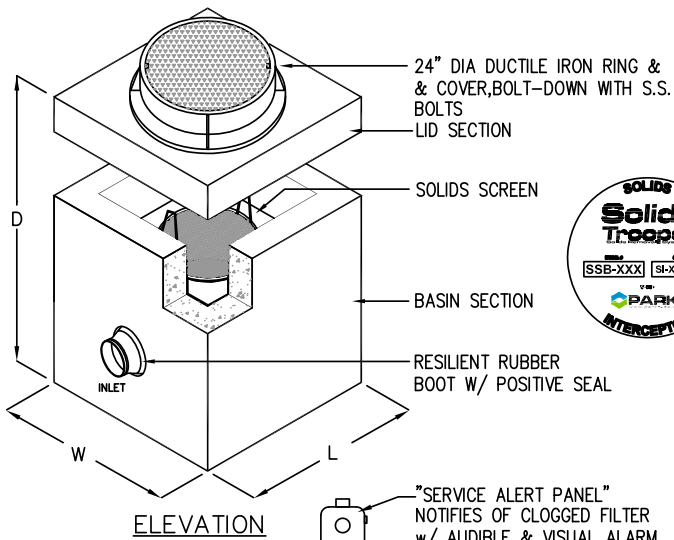


SSB Model Sizes Available

TANK UNITS	CAPACITY (GAL)	SOLIDS CAPACITY (LBS)	SCREEN QTY	STANDARD SIZE LENGTH X WIDTH
LTSSB-150	150	40	1	4'-0" X 4'-0"
LTSSB-200	200	50	1	4'-0" X 4'-0"
LTSSB-250	250	60	1	4'-0" X 4'-0"
LTSSB-300	300	70	1	4'-0" X 4'-0"
LTSSB-350	350	80	2	5'-0" X 5'-0"
LTSSB-550	550	120	3	6'-0" X 6'-0"
LTSSB-750	750	150	3	6'-0" X 6'-0"

STSC Model Sizes Available

MODEL NUMBER	STANDARD SIZE LENGTH X WIDTH	NOMINAL FLOW RATE (GPM)	INTERCEPTOR VOLUME (GAL)	SOLIDS CAPACITY (CU FT)
STSC-500	7'-10" X 4'-4"	50	500	20
STSC-750	7'-10" X 4'-4"	75	750	30
STSC-1000	8'-8" X 5'-4"	100	1,000	40
STSC-1500	9'-0" X 6'-0"	150	1,500	60
STSC-2000	9'-0" X 6'-0"	200	2,000	80
STSC-3000	12'-0" X 6'-0"	300	3,000	120
STSC-4000	15'-0" X 7'-6"	400	4,000	160
STSC-5000	15'-0" X 7'-6"	500	5,000	200
STSC-6000	15'-0" X 7'-6"	600	6,000	280
STSC-7000	18'-9" X 9'-0"	700	7,000	240
STSC-8000	18'-9" X 9'-0"	800	8,000	320
STSC-9000	18'-9" X 9'-0"	900	9,000	360
STSC-10000	18'-9" X 9'-0"	1,000	10,000	400
STSC-12000	21'-2" X 11'-2"	1,200	12,000	480
STSC-15000	21'-2" X 11'-2"	1,500	15,000	600



GENERAL INFORMATION

THE SSB SOLIDS INTERCEPTOR IS USED TO PREVENT POTENTIALLY HARMFUL DEBRIS FROM ENTERING INTO THE PUBLIC SANITARY SEWER. THE UNIT IS DESIGNED FOR EASY MAINTENANCE BY ON-SITE FACILITY PERSONNEL. SCREENS COLLECT THE DEBRIS FROM THE WASTEWATER. A SERVICE ALERT SYSTEM WILL INDICATE WHEN SERVICE IS NEEDED. THE DEBRIS SCREENS ARE THEN TEMPORARILY REMOVED AND EMPTIED INTO AN APPROVED SOLIDS WASTE DUMPSTER. FREQUENCY OF SERVICE IS RELATED TO THE CONCENTRATION OF SOLIDS IN THE INFLUENT BUT MAY BE NEEDED DAILY.

APPLICATIONS

- KITCHEN DISPOSAL & GRINDER WASTELINES
- LIVESTOCK/BARN
- MANUFACTURING AREAS
- MEDICAL WASTE
- MANUFACTURING FACILITY EFFLUENT WATER
- RECYCLING CENTERS

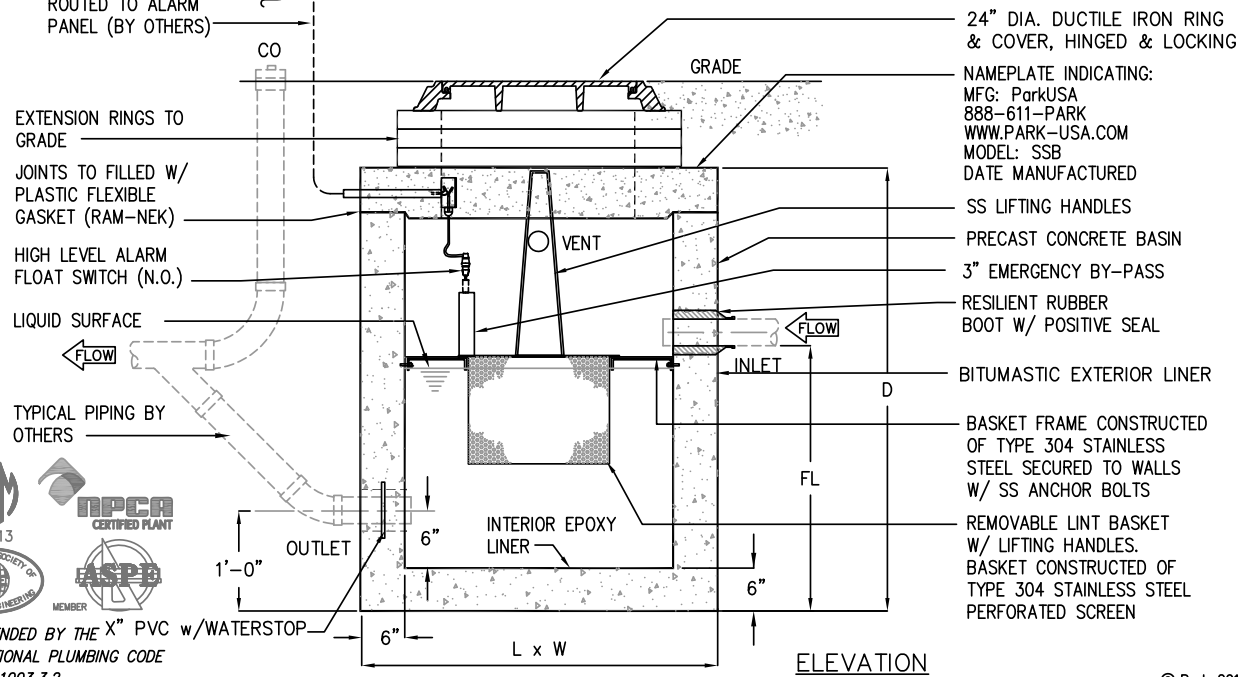
SOLIDS INTERCEPTOR SCHEDULE

MODEL	FLOW GPM	GAL CAP	SOLIDS CAPACITY LBS	SCREEN QTY	DIMENSIONS			
					L	W	FL	D
SSB-150	150	150	40	1	48	48	42	66
SSB-200	200	200	50	1	60	60	36	54
SSB-250	250	250	60	1	48	48	57	72
SSB-350	350	350	80	2	60	60	45	60
SSB-550	550	550	120	3	72	72	45	60
SSB-750	750	750	150	3	72	72	57	84

"SERVICE ALERT PANEL"
NOTIFIES OF CLOGGED FILTER
w/ AUDIBLE & VISUAL ALARM
(120V/5 AMP)

CABLE & CONDUIT
ROUTED TO ALARM
PANEL (BY OTHERS)

ALL DIMENSIONS IN INCHES



RECOMMENDED BY THE X" PVC w/WATERSTOP
INTERNATIONAL PLUMBING CODE
SECTION 1003.3.2

© Park 2016

Specifications

- CONCRETE :** Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
- REINFORCEMENT:** #4 Grade 60 reinforced with steel rebar conforming to ASTM A615 on 12" O.C.E.W. or equal in bottom, walls, and top.
- D.I. CASTINGS:** Manhole frames, covers or grates are manufactured of ductile iron conforming to ASTM A536, AASHTO M306, & AASHTO M105 Standards. Manhole shall be nominal 24" diameter and be traffic duty.

Engineering Data

Interceptor is structurally and hydraulically engineered conforming to Uniform Plumbing Code. The interceptor shall be factory assembled prior to delivery.

Field excavation and preparation shall be completed prior to delivery of interceptor. Use dimensional data as shown.

PROJECT:	X
CUSTOMER:	X
ENGINEER:	X
PROJ #:	X
ORDER #:	X
DATE:	X



SOLIDS INTERCEPTOR				
MODEL SSB - 150 THRU 750 GALLONS				
PM	DRN	CHK	DWG. NO.	REV.
DATE	06/16		SSB-1	A

GENERAL INFORMATION

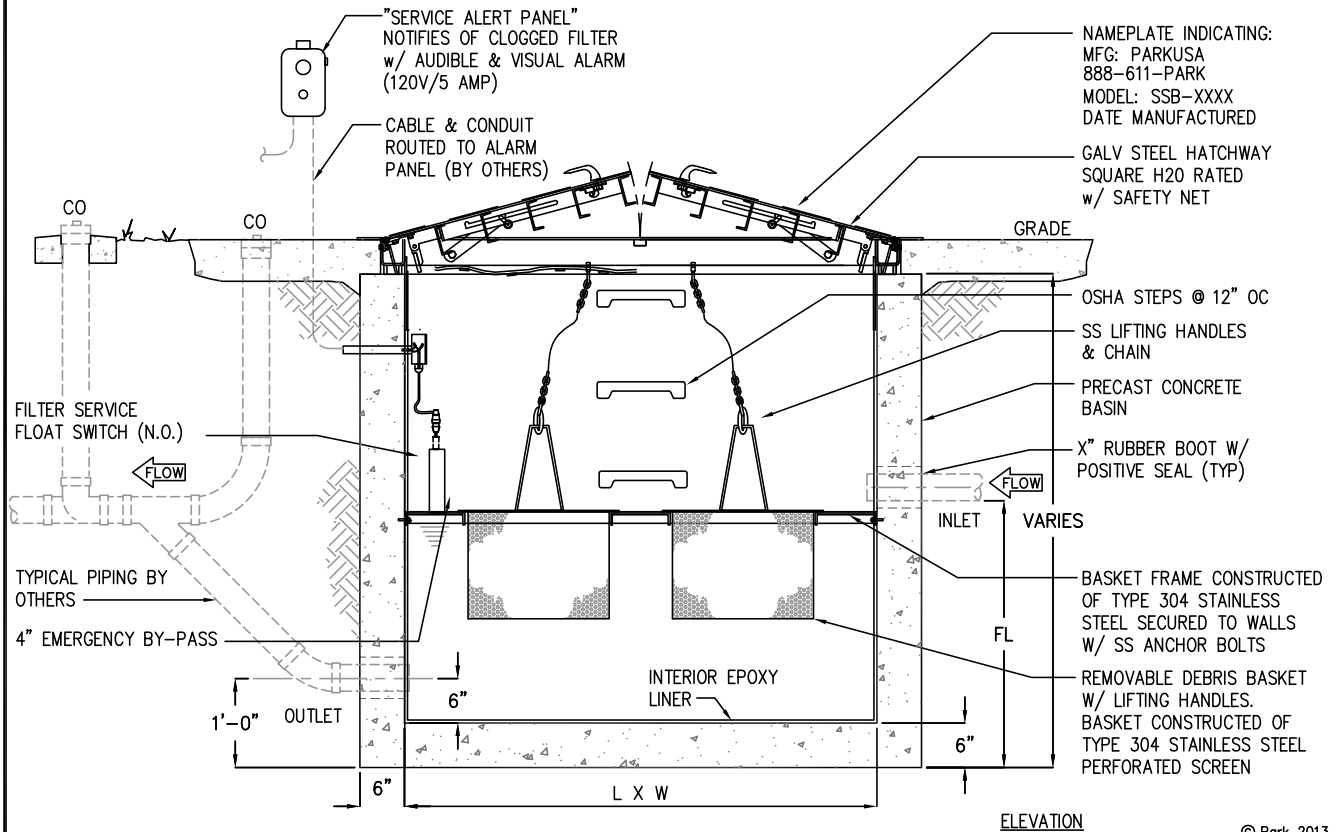
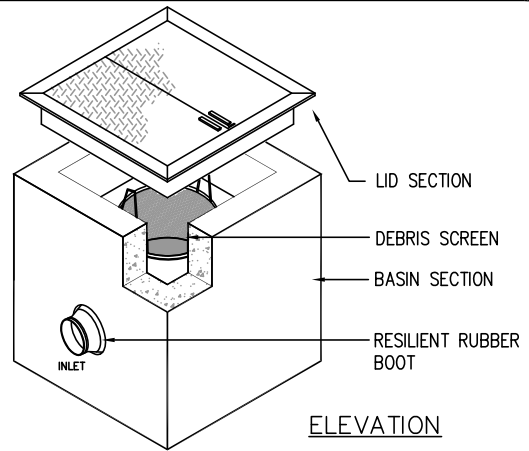
THE SSB SOLIDS INTERCEPTOR IS USED TO PREVENT POTENTIALLY HARMFUL DEBRIS FROM ENTERING INTO THE PUBLIC SANITARY SEWER. THE UNIT IS DESIGNED FOR EASY MAINTENANCE BY FACILITY PERSONNEL. SCREENS COLLECT THE DEBRIS FROM THE WASTEWATER. A SERVICE ALERT SYSTEM WILL INDICATE WHEN SERVICE IS NEEDED. THE DEBRIS SCREENS ARE THEN TEMPORARILY REMOVED AND EMPTIED INTO AN APPROVED SOLIDS WASTE DUMPSTER.

SSB SOLIDS INTERCEPTOR SCHEDULE						
MODEL	GAL CAP	SOLIDS CAPACITY LBS	SCREEN QTY	DIMENSIONS		
				L	W	FL
SSB-350	350	80	2	60	60	45
SSB-550	550	120	3	72	72	45
SSB-750	750	150	3	72	72	57
SSB-1004	1000	200	4	84	84	48
SSB-1006	1000	300	6	84	84	48

ALL DIMENSIONS IN INCHES

APPLICATIONS

- KITCHEN DISPOSAL & GRINDER WASTELINES
- LIVESTOCK/BARN
- MANUFACTURING AREAS
- MEDICAL WASTE
- MANUFACTURING FACILITY EFFLUENT WATER
- RECYCLING CENTERS



Specifications

CONCRETE : Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.

REINFORCEMENT: #4 Grade 60 reinforced with steel rebar conforming to ASTM A615 on 12" O.C.E.W. or equal in bottom, walls, and top.

ACCESS HATCH : 1/4" steel reinforced skid-resistant floor plate with stainless steel tamperproof bolting, hinges, & slam-lock. Rated for H20 (Truck Traffic).

Engineering Data

Interceptor is structurally and hydraulically engineered conforming to UPC & IPC Plumbing Codes. The interceptor shall be factory assembled prior to delivery.

Field excavation and preparation shall be completed prior to delivery of interceptor. Use dimensional data as shown.

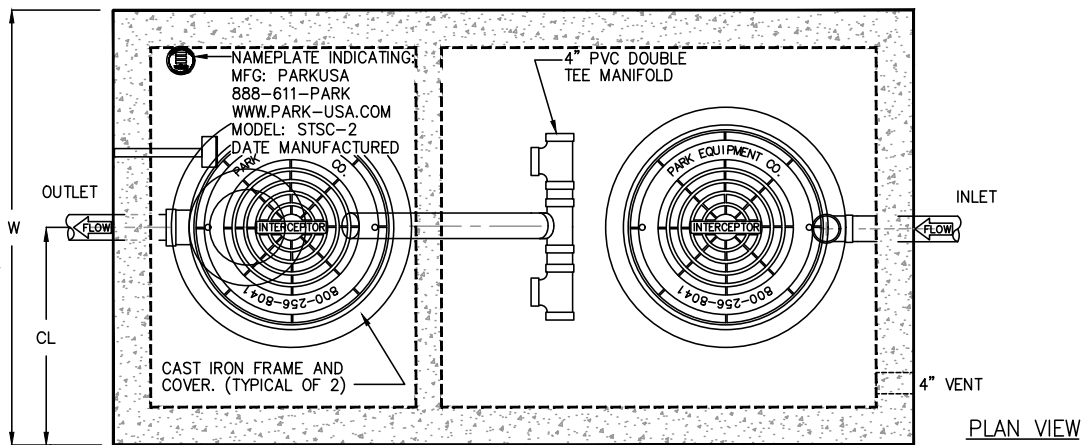
PROJECT: _____
 CUSTOMER: _____
 ENGINEER: _____
 PROJ #: _____
 ORDER #: _____
 DATE: _____



SOLIDS INTERCEPTOR
MODEL SSB

PM	DRN	CH	DWG. NO.	REV.
DATE	11/13		SSB-2	A

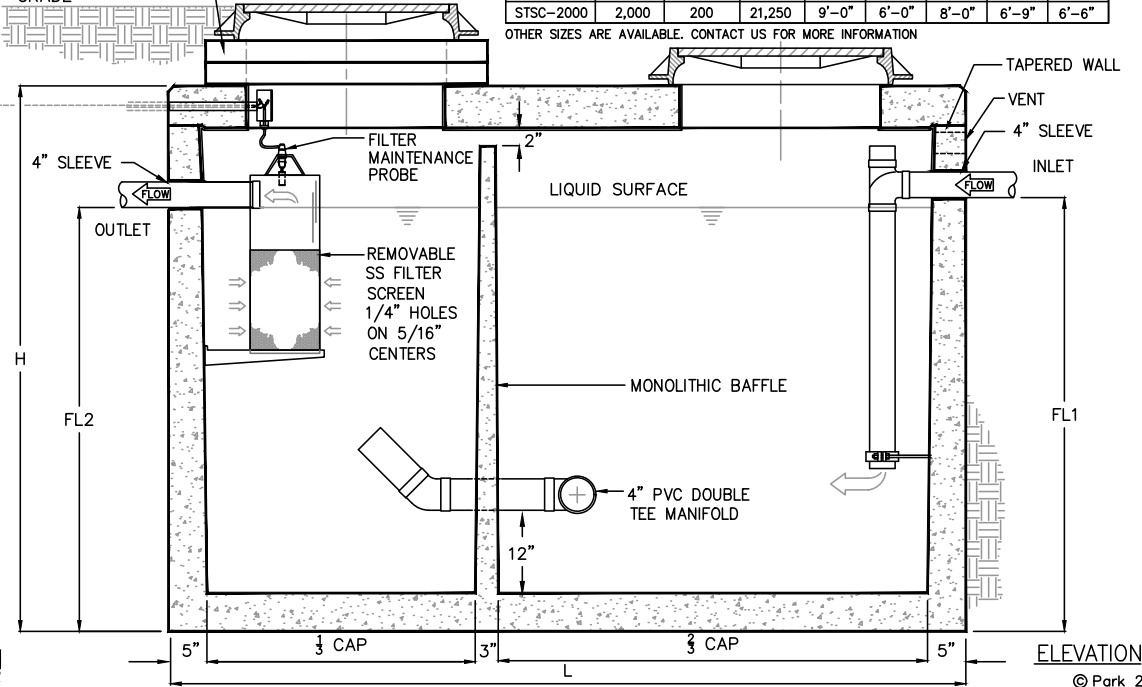
- APPLICATIONS**
- KITCHEN DISPOSAL & GRINDER WASTELINES
 - LIVESTOCK/BARN
 - MANUFACTURING AREAS
 - MEDICAL WASTE
 - MANUFACTURING FACILITY EFFLUENT WATER



SOLIDS INTERCEPTOR SCHEDULE									
MODEL NO.	CAPACITY USGal	FLOW RATE GPM	EMPTY WT (LBS)	LENGTH L	WIDTH W	HEIGHT H	INLET FL1	OUTLET FL2	
STSC-500	500	50	9,500	7'-10"	4'-4"	4'-6"	3'-3"	3'-0"	
STSC-750	750	75	9,900	7'-10"	4'-4"	6'-0"	4'-5"	4'-2"	
STSC-1000	1,000	100	13,350	8'-8"	5'-0"	6'-0"	4'-9"	4'-6"	
STSC-1250	1,250	125	14,650	9'-2"	5'-8"	6'-0"	4'-9"	4'-6"	
STSC-1500	1,500	150	16,050	9'-2"	5'-8"	7'-0"	5'-9"	5'-6"	
STSC-2000	2,000	200	21,250	9'-0"	6'-0"	8'-0"	6'-9"	6'-6"	

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION

"SERVICE ALERT PANEL" NOTIFIES OF CLOGGED FILTER w/ AUDIBLE & VISUAL ALARM (120V/5 AMP)
CONCRETE EXTENSION RINGS AS REQUIRED GRADE



Specifications

- CONCRETE:** Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor, first stage of wall and baffle with sectional riser to required depth. gross empty weight of approximately indicated.
- REINFORCEMENT:** Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal. Structural design is based on AASHTO HS20 loading.
- C.I. CASTINGS:** Manhole frames, covers or grates are manufactured of grey cast iron conforming to ASTM A48-76 Class 30. Manhole shall have 24 inch inside diameter and be traffic duty.

Engineering Data

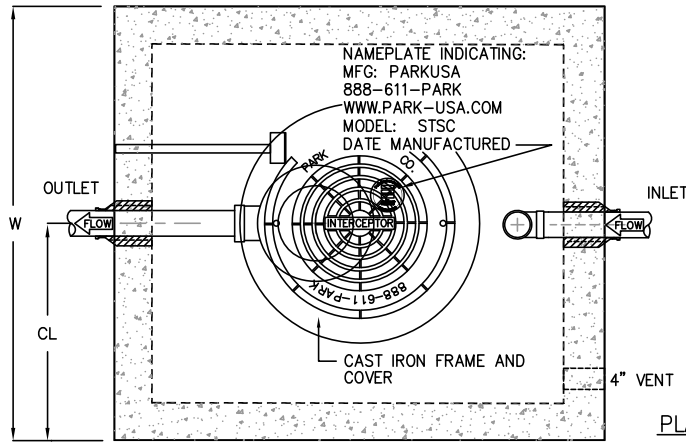
Interceptor is structurally and hydraulically engineered. Nominal liquid capacity as indicated. Manufacturer shall provide buoyancy calculations certified by a licensed engineer upon request. Field excavation and preparation shall be completed prior to delivery of interceptor. Use dimensional data as shown.

PROJECT: _____
 CUSTOMER: _____
 ENGINEER: _____
 ORDER #: _____
 PROJ #: _____
 DATE: _____



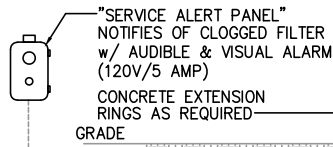
SOLIDS INTERCEPTOR
MODEL STSC 500 THROUGH 2000 GAL

SCALE	NONE	DWG. NO.	REV.
DATE	03/17	STSC-2	A



GENERAL INFORMATION

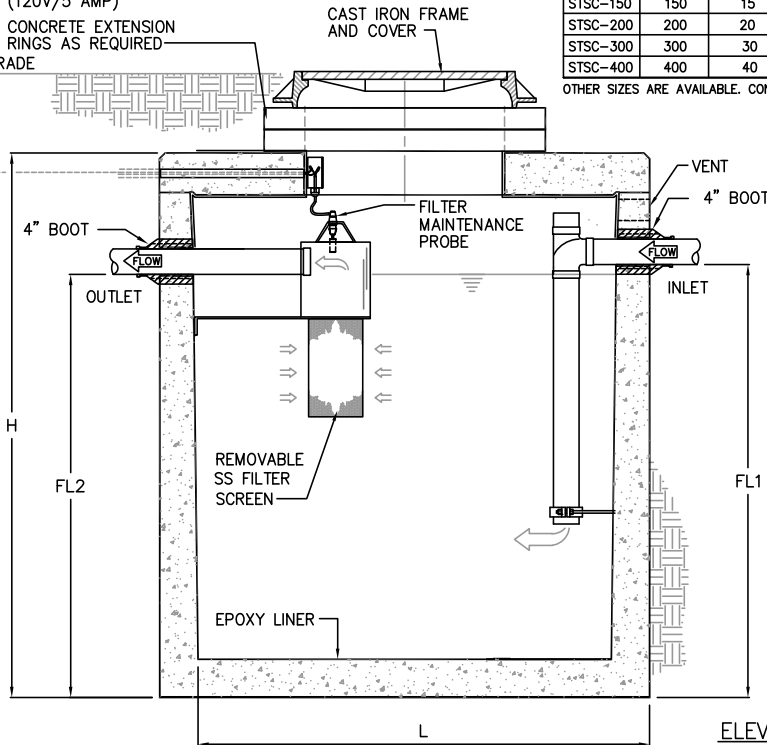
THE STSC SOLIDS INTERCEPTOR IS USED TO PREVENT POTENTIALLY HARMFUL DEBRIS FROM ENTERING INTO THE PUBLIC SANITARY SEWER. THE MULTI-CHAMBER TANK SEPARATES & COLLECTS THE DEBRIS FROM THE WASTEWATER. AN EFFLUENT SCREEN POLISHES THE WASTEWATER PRIOR TO ENTERING THE PUBLIC SEWER. A SERVICE ALERT SYSTEM WILL INDICATE WHEN SERVICE IS NEEDED. EASY MAINTENANCE IS PERFORMED BY PUMPING OUT THE UNIT BY A PROFESSIONAL WASTE DISPOSAL SERVICE. THE EFFLUENT SCREEN CAN BE REMOVED & CLEANED AS REQUIRED.



SOLIDS INTERCEPTOR SCHEDULE

MODEL NO.	CAPACITY USGal	FLOW RATE GPM	SOLIDS CAP (LBS)	LENGTH L	WIDTH W	HEIGHT H	INLET FL1	OUTLET FL2
STSC-150	150	15	360	3'-6"	3'-6"	5'-5"	4'-0"	3'-9"
STSC-200	200	20	480	5'-0"	5'-0"	4'-2"	3'-1"	2'-10"
STSC-300	300	30	725	5'-0"	5'-0"	4'-8"	3'-3"	3'-0"
STSC-400	400	40	1,000	5'-0"	5'-0"	5'-5"	4'-0"	3'-9"

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION



APPLICATIONS

- KITCHEN DISPOSAL & GRINDER WASTELINES
- LIVESTOCK/BARN
- MANUFACTURING AREAS
- MEDICAL WASTE
- MANUFACTURING FACILITY EFFLUENT WATER



© Park 2016

Specifications

- CONCRETE :** Class 1/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor, first stage of wall and baffle with sectional riser to required depth. gross empty weight of approximately indicated.
- REINFORCEMENT:** Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal. Structural design is based on AASHTO HS20 loading.
- C.I. CASTINGS:** Manhole frames, covers or grates are manufactured of grey cast iron conforming to ASTM A48-76 Class 30. Manhole shall have 24 inch inside diameter and be traffic duty.

Engineering Data

Interceptor is structurally and hydraulically engineered conforming to UPC/IPC Plumbing Codes. Nominal liquid capacity as indicated. Manufacturer shall provide buoyancy calculations certified by a licensed engineer upon request. Field excavation and preparation shall be completed prior to delivery of interceptor. Use dimensional data as shown.

PROJECT: _____

CUSTOMER: _____

ENGINEER: _____

PROJ #: _____

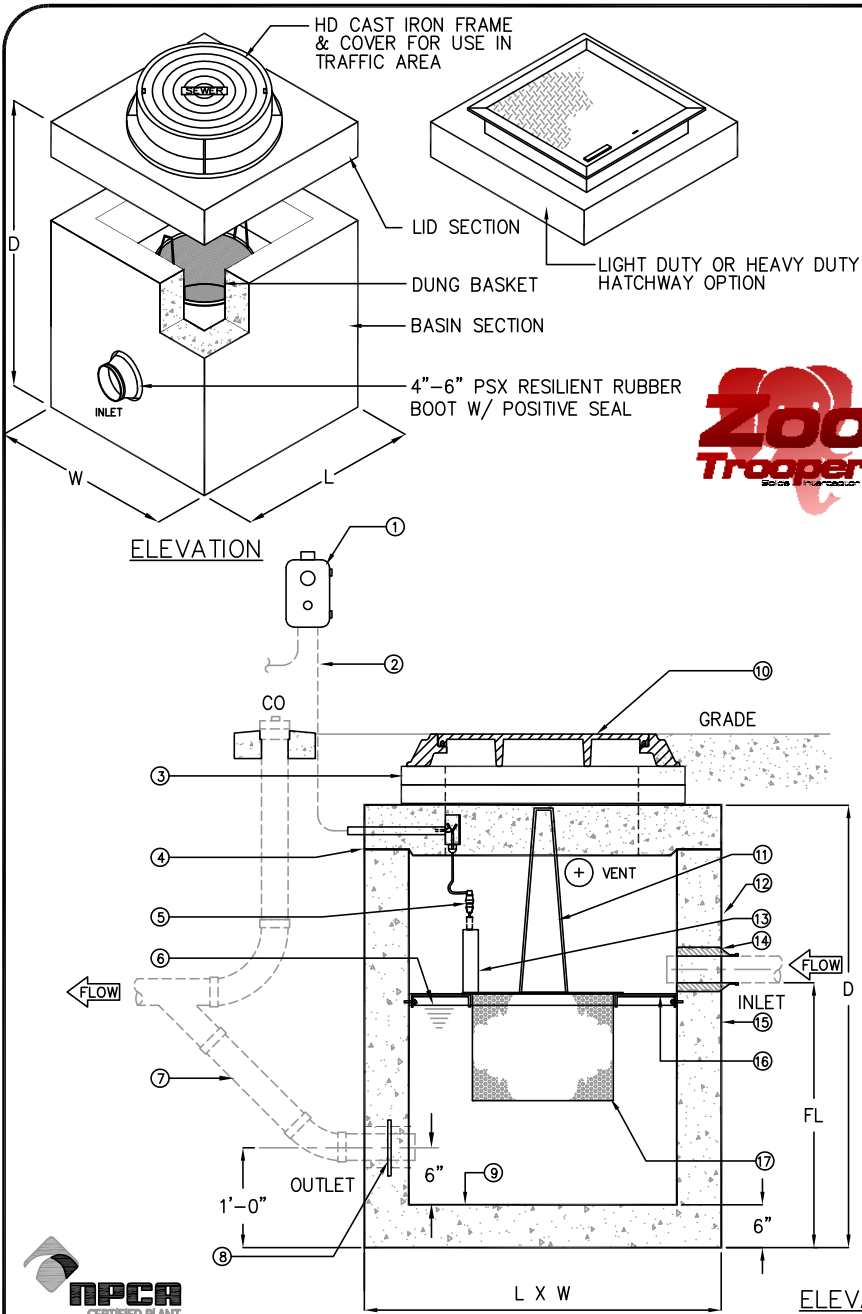
ORDER #: _____

DATE: _____



SOLIDS INTERCEPTOR
MODEL STSC 150 THRU 400 GAL

STSC-1	PM	DRN	CHK	DWG. NO.	REV.
	DATE	04/16			



APPLICATIONS

TYPICAL APPLICATIONS FOR THE MODEL ZT ANIMAL WASTE INTERCEPTOR INCLUDE:

- ANIMAL SHELTERS
- ZOO EXHIBITS
- VETERINARIAN CLINICS
- AG BARNs
- RACE PARKS
- LIVESTOCK EXHIBITS

SOLIDS INTERCEPTOR SCHEDULE						
MODEL	FLOW GPM	SCREEN QTY	DIMENSIONS			
			L	W	FL	D
ZT-020	20	1	42	42	30	48
ZT-060	60	1	42	42	42	60
ZT-080	80	1	42	42	45	60
ZT-100	100	1	48	48	36	66
ZT-160	160	1	48	48	42	66
ZT-200	200	1	60	60	36	54
ZT-300	300	2	60	60	48	66
ZT-400	400	2	72	72	45	60
ZT-500	500	3	72	72	51	66
ZT-600	600	3	72	72	57	72

ALL DIMENSIONS IN INCHES



KEYED NOTES		
MARK	QTY	DESCRIPTION
1	1	"SERVICE ALERT PANEL" NOTIFIES OF CLOGGED FILTER W/ AUDIBLE & VISUAL ALARM (120VAC/ 5 AMP)
2	1	CABLE & CONDUIT ROUTED TO ALARM PANEL (BY OTHERS)
3	1	EXTENSION RINGS TO GRADE
4	1	JOINTS TO BE FILLED W/ PLASTIC FLEXIBLE GASKET (RAM-NEK)
5	1	FILTER SERVICE FLOAT SWITCH (N.O.)
6	1	LIQUID SURFACE
7	1	TYPICAL PIPING BY OTHERS
8	1	PVC W/ WATERSTOP
9	1	EPOXY LINER
10	1	24" DIA. CAST IRON FRAME & CONVER
11	1	SS LIFTING HANDLES
12	1	PRECAST CONCRETE BASIN
13	1	3" EMERGENCY BYPASS 4-6" PSX RESILIENT RUBBER BOOT W/ POSITIVE SEAL
14	1	RUBBER BOOT W/ POSITIVE SEAL
15	1	BITUMASTIC EXTERIOR LINER
16	1	BASKET FRAME CONSTRUCTED OF TYPE 304 SS SECURED TO WALLS W/ SS ANCHOR BOLTS
17	11	REMOVABLE DUNG BASKET W/ LIFTING HANDLES. BASKET CONSTRUCTED OF TYPE 304 STAINLESS STEEL PERFORATED SCREEN

Wastewater Systems



© Park 2016

Specifications

- CONCRETE :** Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
- REINFORCEMENT:** #4 Grade 60 reinforced with steel rebar conforming to ASTM A615 on 12" O.C.E.W. or equal in bottom, walls, and top.
- C.I. CASTINGS:** Manhole frames, covers or grates are manufactured of grey cast iron conforming to ASTM A48-76 Class 30. Manhole shall have min. 32 inch inside diameter and be traffic duty.

Engineering Data

Interceptor is structurally and hydraulically engineered. The interceptor shall be factory assembled prior to delivery. Field excavation and preparation shall be completed prior to delivery of interceptor. Use dimensional data as shown.

PROJECT: X
CUSTOMER: X
ENGINEER: X
PROJ #: X
ORDER #: X
DATE: X



ZOO TROOPER ANIMAL WASTE INTERCEPTOR

PM	DRN	ENG	DWG. NO.	REV.
		CA	ZT-1	A
DATE 06/2017				



Solids Trooper™

Solids Removal System

Features

- Pre-engineered from 500 - 15,000 gallons
- Precast concrete, polyethylene, fiberglass or steel construction
- Above or below grade installation
- Custom screen sizes (down to 100 micron)
- Pedestrian or traffic rated
- Remote maintenance alarm
- Interior liners available
- Meets all building codes

Solids Interceptor

The ParkUSA® SolidsTrooper® is a solids interceptor that can be used in commercial establishments to collect and hold excessive amounts of solid substances found in wastewater. A solids interceptor should be installed in areas, as determined by the Authority Having Jurisdiction (AHJ), where pretreatment of waste streams is necessary. Some AHJs require the addition of screens or baskets that prevent solids greater than one-half inch (1/2") in diameter from entering the sanitary sewer system. In some cases, project requirements call for even finer separation.

The SolidsTrooper is a solids and sediment interceptor that consists of a multi-compartment basin and unique separation technology for solids and sediment separation.

Typical applications for Solids Interceptors include food processing, zoos, ag barns, healthcare, glass bottlers, dumpster areas and manufacturing facilities. Waste discharge loadings from these facilities contain solid substances like waste grindings, potato peels, rice, aquarium gravel, animal solids, glass, trash, dental waste, jewels, plaster, hair, ceramic waste, fish bones and meat trimmings.

The SolidsTrooper is compliant with both UPC and IPC plumbing codes. The SolidsTrooper can be equipped with a debris screening technology that prevents string, rags, buttons and other materials from entering the public sanitary sewer system.



WW SOLIDS TROOPER
Standard



How it Works

The SolidsTrooper is typically located outside of the building and buried below grade. The wastewater exits the laundry via gravity flow and enters the interceptor. As the wastewater enters the interceptor's first compartment, the water velocity is significantly reduced, allowing for separation and fall-out of the solids and sediment. Water travels into the second compartment through the piping manifold where further separation occurs. The water will exit thru an outlet pipe positioned between the floating and settling layers. Neutral buoyant particles are further separated by the internal effluent screen.

The buried interceptor is typically constructed of precast concrete, providing years of continuous service. The interceptor contains multiple compartments where the solids will flocculate and float to the surface, and heavier solids will sink to the bottom. The discharging effluent is comprised of the solids-free water between these layers.

To ensure maximum performance of interceptor, a sample well is recommended downstream of the interceptor. As its name implies, a water sample can be drawn and lab tested to determine sediment (TSS) content and interceptor performance.

Visit solidstrooper.parkusa.com for more information and design assistance.

To request a quote or catalog, visit request.parkusa.com.

System Components

Typical components include:

Screen Filter: Contained in the STSC configuration, the screening filter offers enhanced separation for neutral buoyancy particles. Screens are available down to 100 microns. All sediments reside in the interceptor for period cleaning by a vac-truck service company.

Filter Baskets: Contained in the STSSB configuration, the screening baskets are removable for onsite solid waste disposal of the collected solids and sediment. This can be maintained by onsite maintenance personnel.

Control System: Consists of NEMA 4X panel with service notification and an internal tank sensor for easy use by the end-user.

Interceptor Basin: The shell of the unit can be constructed from Precast Concrete, Fiberglass, or Steel. Model names and configurations vary by material.



APPLICATIONS





Features

- Pre-engineered from 500 - 15,000 gallons
- Precast concrete, polyethylene, fiberglass or steel construction
- Custom screen sizes (down to 100 micron)
- Above or below grade installation
- Pedestrian or traffic rated
- Remote maintenance alarm
- Interior liners available
- Meets all building codes

Animal Habitat Interceptor

The ParkUSA® ZooTrooper® is a solids interceptor specifically designed for animal habitats and animal shelters, which produce an enormous amount of water and waste that typically gets flushed down the drain. The ZooTrooper is a debris and sediment interceptor that consists of a multi-compartment basin and unique separation technology.

Efficient drainage and wastewater treatment of drainage is essential for each habitat, as each is unique and offers a variety of plants and animals that live in the specific environments. In addition, there are also sanitary conditions needed for caretakers and patrons.

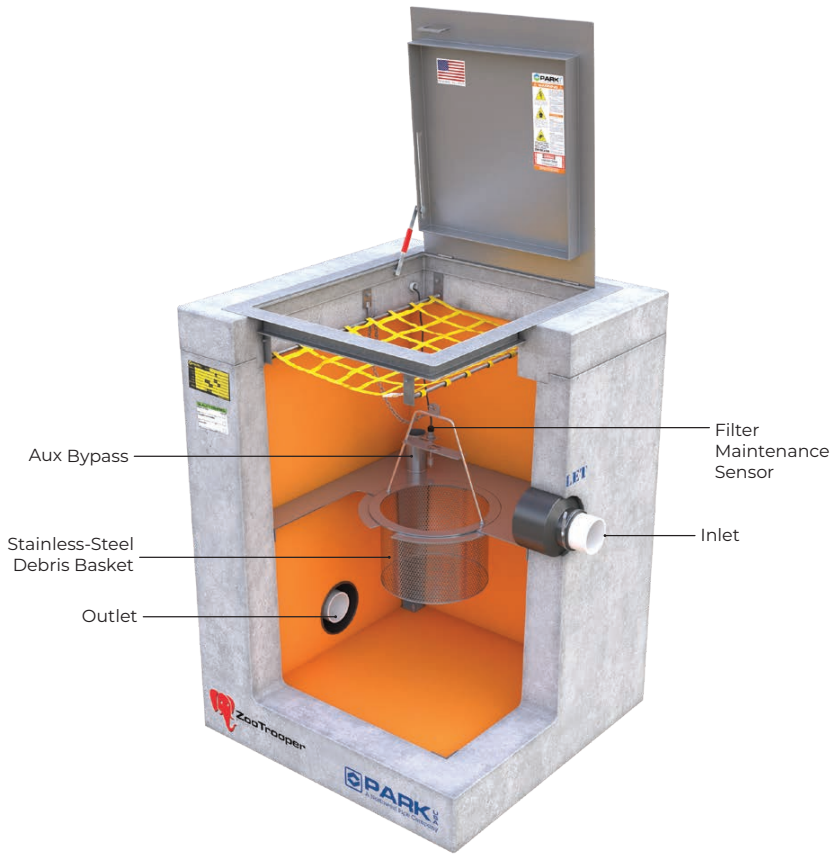
ZooTroopers are used for various applications, from small animal clinics to elephant and rhinoceros zoo habitats. Other applications include agriculture barns, show arenas, aquariums, and animal shelters.

A solids interceptor should be installed as determined by the engineer and the the Authority Having Jurisdiction (AHJ). Typical requirements prevent solids greater than one-half inch (½") in diameter from entering the sanitary sewer system. In some cases, project requirements call for even finer separation.

The ZooTrooper is compliant with both UPC and IPC plumbing codes.



WW | ZOOTROOPER
Standard



System Components

The ParkUSA ZooTrooper components include:

Filter Baskets: Contained in the ZT configuration, the screening baskets are removable for onsite solid waste disposal of the collected solid debris. This can be maintained by onsite maintenance personnel. This model is recommended for applications where there IS onsite maintenance personnel and remote habitats (where vac-trucks are not practical).

Screen Filter: Contained in the ZTSC configuration, the screening filter offers enhanced separation for neutral buoyancy particles. Screens are available down to 100 microns. All debris and sediment reside in the interceptor for period cleaning by a vac-truck service company. This model is recommended for applications where there is NOT onsite maintenance personnel.

Control System: Consists of NEMA 4X panel with service notification and internal tank sensor for easy use by the end-user.

Interceptor Basin: The shell of the unit can be constructed from Precast Concrete, Fiberglass, or Steel. Model names and configurations vary by material.

How it Works

The ZooTrooper is typically located outside of the building or habitat. The unit is buried below grade where wastewater plumbing gravity flows into the interceptor. As the wastewater enters the interceptor's first stage, the water velocity is significantly reduced, allowing for separation and fall-out of the debris into filter baskets. During continuous use, wastewater percolates through the filter baskets allowing fecal matter to break down and travel thru the screen in to the second stage of the interceptor. Debris that will be retained can include large fecal, straw, vegetation, litter, bones, food, and the occasional chew toy. The filtered wastewater then exits the outlet to the sanitary sewer.

All animal habitats require a good maintenance plan for a healthy and clean environment. The ZooTrooper incorporates a filter maintenance alarm used to alert onsite staff of service requirements. This typically includes the need to empty the baskets into solid waste disposal or composting.

To ensure maximum performance of each ZooTrooper, a sample well is recommended downstream of the interceptor. As its name implies, periodic water samples can be drawn and lab tested to determine sediment (TSS) and BOD content.

Visit zootrooper.parkusa.com for more information and design assistance.

To request a quote or catalog, visit request.parkusa.com.

APPLICATIONS





Solids TrooperTM PF

PARTICLE INTERCEPTOR

Features

- Pre-engineered from 100-500 gallons
- Precast concrete, polyethylene, fiberglass or steel construction
- Custom screen sizes (down to 100 micron)
- Above or below grade installation
- Pedestrian or traffic rated
- Remote maintenance alarm
- Interior liners available
- Meets all building codes

Industrial Wastewater Interceptor System

The ParkUSA Solids TrooperTM interceptor can be used in industrial or commercial establishments to prevent potentially harmful liquids and debris from entering the public sanitary sewer. A particle interceptor should be installed in areas, as determined by the Authority Having Jurisdiction (AHJ), where pretreatment of waste streams is necessary. Some AHJs require the addition of screens or baskets that prevent solids greater than one-half inch (½") in diameter from entering the sanitary sewer system. In some cases, project requirements call for even finer separation.

The SolidsTrooper material interceptor consists of a multi-compartment basin and unique filtration technology for solids and liquid solvents separation. Typical applications for particle Interceptors include industrial and manufacturing facilities that generate waste streams containing solid substances like paint chips, solvents, waste grindings, glass, trash, dental waste, plaster, and ceramic waste.

The SolidsTrooper follows both the UPC and IPC plumbing codes. The SolidsTrooper can be equipped with a debris screening technology that prevents string, rags, buttons and other materials from entering the public sanitary sewer system.



WW | SOLIDSTROOPER PF
Standard



How it Works

The SolidsTrooper Model PF is typically located outside of the building and buried below grade. The wastewater exits the building via gravity flow and enters the interceptor. As the wastewater enters the interceptor's first compartment, the water flows through a proprietary filtration system to remove harmful particles and liquid solvents. The water exits through an outlet pipe positioned between the floating and settling layers. Neutral buoyant particles are further separated by the internal effluent screen.

The buried interceptor is typically constructed of precast concrete with an epoxy interior, providing years of continuous service. The interceptor contains disposable media filters for capturing harmful particles and liquids. The discharging effluent is comprised of the solids-free water.

To ensure maximum performance of interceptor, a sample well is recommended downstream of the interceptor. As its name implies, a water sample can be drawn and lab tested to determine harmful liquid content and interceptor performance.

Visit **SolidsTrooperPF.parkusa.com** for more information and design assistance.

To request a quote or catalog, visit **request.parkusa.com**.

System Components

The ParkUSA® SolidsTrooper Model PF contains the main components listed below:

Screen Filter: Contained in the STSC configuration, the screening filter offers enhanced separation for neutral buoyancy particles. Screens are available down to 100 microns. All sediment resides in the interceptor for period cleaning by a vac-truck service company.

Filter Bags: Contained in the PF configuration, the screening bags are removable for reuse or disposal. The collected solids and sediment may be disposed as solid waste depending upon composition.

Control System: Consists of NEMA 4X panel with service notification and an internal tank sensor for easy use by the end-user.

Interceptor Basin: The shell of the unit can be constructed from Precast Concrete, Fiberglass, or Steel. Model names and configurations vary by material.

SolidsTrooper PF is protected by US Patent #10,040,006

Options Available

Oil stop valve: designed to prevent oily water discharge

Hydrocarbon pillows: to capture hydrocarbons mixed in the discharge

APPLICATIONS



Zoos /
Animal Habitats



Municipal



Industrial



Commercial



Good to use
in BMPs



Sediments
Retention

SAND-OIL SEPARATOR



PARK USA
A Northwest Pipe Company

ENGINEERING FACTS

GENERAL INFORMATION

Wastewater that contains significant amounts of oils or solids that interfere with the proper drainage and treatment of effluent water must be treated before being discharged into the sanitary sewer system. To comply with effluent water quality standards mandated by the EPA and local plumbing codes, using wastewater treatment employing oil/water separators is common.

The ParkUSA Model AQU Oil-Water Separator is a UL listed passive gravity flow system for the separation of oil from oil-water mixtures. The design utilizes the difference in specific gravities between oil and water (buoyancy force) heightened by the use of patented coalescing plates. Using a gravity flow system, the separator is designed to receive oily water and process it in a single step.

MODELS



SOCMP-S



SOCMP-F



SOCMP

Wastewater that contains significant amounts of oils or solids that interfere with the proper drainage and treatment of effluent water must be treated before being discharged into the sanitary sewer system. To comply with effluent water quality standards mandated by the EPA and local plumbing codes, using wastewater treatment employing oil/water separators is common.

FEATURES

- Qualified & Tested per Underwriters Laboratory UL 2215
- Meets ULC-S656
- Used to process wastewater runoff for compliance with US EPA Clean Water Act criteria
- Available tank capacities from 300 to 50,000 gallons
- Handles Flow Rates from 45 to 10,000 gallons per minute
- Rate effluent efficiency of less than 10 ppm
- Optional double-wall & jacketed designs offer integral secondary containment which can be tested for tightness or continuously monitored for leaks
- Primary Storage Tank and secondary containment comparable with a wide range of oils
- Corrosion protection of exterior tank constructed to nationally recognized UL & STI standards with strict third-party quality control inspection program
- Customized manways can be provided for cost effective maintenance areas
- Liquid level sensors and control panels available to sense the oil level within the tank, and alert the operator when oil needs to be removed

MODELS

Besides the AquaSweep, ParkUSA offers the following models for Sand-Oil Interceptor units:

ParkUSA SOCMP, typically, this series of sand-oil separator is the most economic and preferred choice over all other separator types. The SOCMP series separator is manufactured of Class II 4500 PSI precast concrete offering superior structural strength and longevity. As an option, the interceptor can be equipped with a variety of interior chemical proof liners including PVC.

ParkUSA SOCMP-S, this series is a steel unit and is recommended for applications where the separator is installed in a freestanding location, i.e., in a basement or on a slab.

ParkUSA SOCMP-F, this model is manufactured from fiberglass reinforced polyester (FRP), it is corrosion resistant and lightweight for above or below ground installations.

SYSTEM COMPONENTS

The ParkUSA AquaSweep Separator presents the main components described below:

- Sensors: Indicate water level inside unit.
- Control Panel: The Control System consists of a panel that receives signal from the high-level sensor, it is programmed for easy use for the end-user.
- Containment Vault: The shell of the unit is made from steel in accordance with the Steel Tank Institute ACT-100-U.
- Coalescing Media Pack: Engineered media designed for oil retention.

OPERATION

The function of the AquaSweep, just as the Sand-Oil CMP Separator, is to intercept free oils/solids and retain them for periodic removal. The wastewater is treated by the separator in two stages. The initial stage of treatment occurs as the inflow strikes a corrugated diffusion plate. This process is known as the Buffalo-Morse Principle. Solids and oil are separated through velocity reduction and sinusoidal flow patterns. Heavy solids settle and 100 percent oil slugs rise immediately to the surface.

The second stage of treatment occurs as the wastewater flows through the Coalescing Media Pack (CMP). Both the smaller oil droplets and fine solids are progressively separated. Downstream, the oil dam prevents collected oil from entering the outlet piping.

The Coalescing Media Pack™ consists of closely spaced corrugated plates manufactured with an oleophilic (oil attracting) material. The patented plates are an enhanced version of the plates utilizing the Royal Dutch Shell Principle. The corrugated pattern induces a sinusoidal laminar flow of the oily water mixture. Under laminar flow conditions, buoyancy forces cause oil droplets to rise until they adhere themselves to the oleophilic plates. Small oil droplets tend to coalesce into sheets of oil on the underside surfaces of the corrugated plates. The sinusoidal flow path also promotes a

high incidence of droplet collision as the fluid flow constantly changes direction from a downward path to a vertical path. The coalescing oil rises to the surface in large globules through weep holes or gutters in the coalescing plate pack.

DESIGN CONSIDERATIONS

The main design guidelines state that:

1. Tanks shall be manufactured in accordance with Steel Tank Institute ACT-100-U®, Specification for External Corrosion Protection of Composite Steel Underground Storage Tanks.
2. Tanks shall be manufactured and listed in accordance with Underwriters Laboratories UL 58, Steel Underground Storage Tanks for Flammable and Combustible Liquids and UL 1746, External Corrosion Protection Systems for Steel Underground Storage Tanks or ULC-S603.1, Standard for Corrosion Protection for Steel Underground Tanks for Flammable and Combustible Liquids.
3. Double-wall tanks shall provide testable secondary containment on site and access for interstitial leak detection monitoring.
4. Tanks shall be externally coated with a minimum 70 mils STI approved coating.
5. Tanks shall be factory tested with a high-voltage holiday test.

SIZING

The separator can be sized many different ways. The most common way is using the effluent flow rate as determined by either the equipment that is used in the area serviced or using DFU's and converting the total DFU to GPM. Additionally, there is a method of sizing outlined in the International Plumbing Code as outlined in section 1003.4.2.2 "Garages and Service Stations":

"oil separators shall have a minimum capacity of six cubic feet (0.168 m³) for the first 100 square feet (9.3 m²) of area to be drained, plus 1 cubic foot (0.28 m³) for each additional 100 square feet (9.3 m²) of area to be drained into the separator"

The process of choosing the appropriate unit is the same as for a SOCMP, given flow rate the corresponding volume of the unit can be read from the standard chart.

MAINTENANCE

The frequency of cleaning at any given installation will vary depending on use. The AquaSweep Separator should be inspected at least bi-annually. The High Oil Alarm system will notify of immediate servicing requirements.

When necessary, the separator should be pumped out by a licensed pumping company familiar with regulations regarding proper disposal.



Gravity Oil Water Separator

Wastewater containing significant amounts of oils or solids that interfere with the proper drainage and treatment of effluent water must be treated before being discharged into the sanitary sewer system. To comply with effluent water quality standards mandated by the EPA Clean Water Act and local plumbing codes, using an oil-water separator for wastewater pretreatment is recommended.

The ParkUSA® AquaSweep™ AQ Series is an oil-water separator that utilizes an enhanced gravity separation method of oil from oil-water mixtures. The Model AQU is designed for underground applications, whereas the Model AQA is designed for aboveground applications. Engineers specify the AquaSweep™ oil water separator to ensure wastewater pretreatment meets project and code requirements.



Model OTA
Alarm System

OilStop Valve is protected by US Patent #9,963,358

AQUA SWEEP

Features

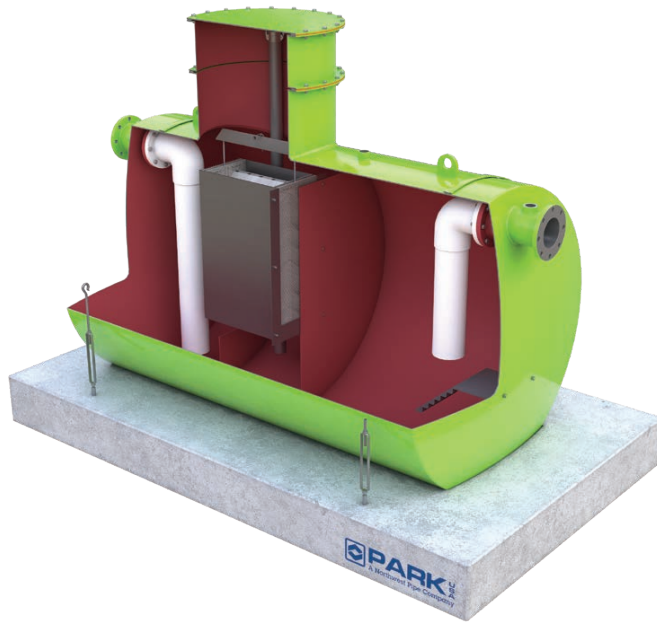
- Available tank capacities from 300 to 60,000 gallons
- Handles flow rates from 45 to 6,000 gallons per minute
- Rate effluent efficiency of less than 10 ppm or 5 ppm
- Double-wall designs offer integral secondary containment which can be tested for tightness or continuously monitored for leaks
- Used to process wastewater runoff for compliance with US EPA Clean Water Act
- Meets ULC-S656 standards for oil-water separation
- Qualified & listed per Underwriters Laboratory UL-2215
- Made in the USA - AquaSweeps are made in America and meet the requirements of the Buy America Act



Model OSV
OilStop Valve



WW AQUASWEEP
Standard



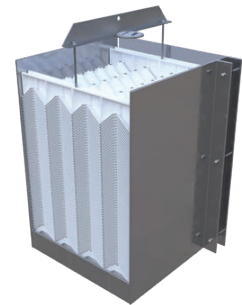
How it Works

AquaSweep™ gravity oil water separators are designed for gravity-induced separation of oil from water. This system is passive. The separator is designed for gravity removal of non-emulsified hydrocarbons, i.e. motor oils, lightweight oils, and related petroleum products with a specific gravity of less than 1.0. Oily wastewater enters the AquaSweep™ separator, where the flow and turbulence of incoming water is reduced. Fluid then flows through various pre-selected coalescing materials to accelerate the separation process. The buoyant properties of the hydrocarbons cause oil droplets to rise and combine into larger oil globules while passing through the coalescing media. The globules rise to the surface and float on top of the water, while sludge and other matter settle and accumulate at the bottom of the tank compartment. The treated wastewater then exits the separator and enters the sanitary sewer system. Accumulation of oil and sludge within the separator is contained until it can be removed and disposed of properly. An optional oil-stop valve can be used to ensure that no oil leaves the separator if the AquaSweep™ separator oil storage capacity has been exceeded.

System Components

The AquaSweep™ Oil Water Separator consists of the following primary components:

- Tank shell: The shell of the unit is made using double-wall steel with access hatchways and associated piping in accordance with the Steel Tank Institute ACT-100-U.
- Coalescing media pack: Engineered coalescing media designed to accelerate oil separation.
- Control system: Consists of NEMA 4X intrinsic-safe panel with high oil and leak detection sensors.
- Oil Stop Valve: For positive effluent control of pollutants.



Coalescing Media Plates

As stormwater pollutants travel through the CMP (coalescing media plate pack) oil rises to the top and solids drop to the bottom through dedicated surfaces and weep holes. Plate supports at the bottom allow for easy removal of the solids that collect beneath the plates. Because of the steep angles and short travel distances, oils and solids are quickly released, eventually floating to the surface of the unit or settling to the bottom.

Design Considerations

Tanks shall be manufactured in accordance with Steel Tank Institute ACT-100-U®, Specification for External Corrosion Protection of Composite Steel Underground Storage Tanks. Tanks shall be manufactured and listed in accordance with Underwriters Laboratories UL 58, Steel Underground Storage Tanks for Flammable and Combustible Liquids and UL 1746, External Corrosion Protection Systems for Steel Underground Storage Tanks or ULC-S603.1, Standard for Corrosion Protection for Steel Underground Tanks for Flammable and Combustible Liquids. Double-wall tanks shall provide testable secondary containment on site and access for interstitial leak detection monitoring.

Visit aquasweep.parkusa.com for more information and design assistance.

To request a quote or catalog, visit request.parkusa.com.

APPLICATIONS



Good to use
in BMPs



Municipal



Commercial



Industrial



Medical
Facilities

SOCMP




PARK USA
A Northwest Pipe Company

ENGINEERING FACTS

GENERAL INFORMATION

Wastewater that contains significant amounts of oils or solids, that interfere with the proper drainage and treatment of wastewater, must be treated before being discharged into the sanitary sewer system. To comply with effluent water quality standards mandated by the EPA and local plumbing codes, wastewater treatment utilizing oil/water separators is common. The Sand-Oil CMP (Coalescing Media Pack) Separator consist of a two-compartment precast concrete vault which utilizes an enhanced gravity technique for oil separation: the patented coalescing media pack. Typical applications include vehicle maintenance and wash down facilities, fueling depots, parking lots, and storm water runoff.

The ParkUSA Oil Trooper Oil-Water Separator is a passive gravity flow system for the separation of oil from oily water mixtures. The design uses the difference in specific gravities between oil and water (buoyancy force) and is enhanced by the use of patented coalescing plates. Using a gravity flow system, the separator is designed to receive oily water and process it in a single step.

OILTROOPER MODELS



SOCMP-S



SOCMP-S

MODELS

The current models available for Sand-Oil Interceptor units are:

ParkUSA SOCMP, typically, this series of sand-oil separator is the most economic and preferred choice over all other separator types. The SOCMP series separator is manufactured of Class II 4500 PSI precast concrete offering superior structural strength and longevity. As an option, the interceptor can be equipped with a variety of interior chemical proof liners including PVC.

ParkUSA SOCMP-S, this series is a steel unit and is recommended for applications where the separator is installed in a freestanding location, i.e., in a basement or on a slab.

The ParkUSA Oil Trooper® Oil-Water Separator is a passive gravity flow system for the separation of oil from oily water mixtures. The design uses the difference in specific gravities between oil and water (buoyancy force) and is enhanced by the use of patented coalescing plates.

FEATURES

- Precast Concrete, Fiberglass or Steel Construction
- Oil-Water Separation with Oil Detection and Separation Technology
- Certified Performance
- Above or Below Grade Installation
- Pedestrian or Traffic Rated
- Remote Maintenance Alarm
- Interior Liners Available Meets all Building Codes
- Low and Easy Maintenance

SYSTEM COMPONENTS

The ParkUSA Sand-Oil Separator presents the main components showed below:

Sensors: Indicate water level inside unit.

Control Panel: The Control System consists of a panel that receives signal from the high-level sensor, it is programed for easy use for the end-user.

Containment Vault: The shell of the unit can be constructed from Precast Concrete, Fiberglass, or Steel. Model names and configurations vary by material.

Coalescing Media Pack: Engineered media designed for oil retention.

OPERATION

The function of the Sand-Oil CMP Separator is to intercept free oils/solids and retain them for periodic removal. The wastewater is treated by the separator in two stages. The initial stage of treatment occurs as the inflow strikes a corrugated diffusion plate. This process is known as the Buffalo-Morse Principle. Solids and oil are separated through velocity reduction and sinusoidal flow patterns. Heavy solids settle and 100 percent oil slugs rise immediately to the surface.

The second stage of treatment occurs as the wastewater flows through the Coalescing Media Pack (CMP). Both the smaller oil droplets and fine solids are progressively separated. Downstream, the oil dam prevents collected oil from entering the outlet piping.

The Coalescing Media Pack™ consists of closely spaced corrugated plates manufactured with an oleophilic (oil attracting) material. The patented plates are an enhanced version of the plates utilizing the Royal Dutch Shell Principle. The corrugated pattern induces a sinusoidal laminar flow of the oily water mixture. Under laminar flow conditions, buoyancy forces cause oil droplets to rise until they adhere themselves to the oleophilic plates. Small oil droplets tend to coalesce into sheets of oil on the underside surfaces of the corrugated plates. The sinusoidal flow path also promotes a high incidence of droplet collision as the fluid flow constantly changes direction from a downward path to a vertical path. The coalescing oil rises to the surface in large globules through weep holes or gutters in the coalescing plate pack.

DESIGN CONSIDERATIONS

For general commercial applications, the standard Oil/Water CMP Separators are recommended. The parameters used in designing these gravity flow units are: ambient fluid temperatures (40-60F), standard atmospheric conditions, oil/water specific gravity differential of 0.15, pH of 6-8 and an influent oil concentration of 400 ppm or less. The resultant effluent oil concentration of the wastewater should be less than 15 ppm which conforms to EPA regulations.

The oil/water separator should be located so as to intercept the building sewer. The separator should be installed so that it will be easily accessible for inspection, cleaning, and removal of separated waste products. There should be an adequate number of separator access openings to permit cleaning and/or removal of the coalescing plate packs. All access manholes should extend to grade. The separator should be located near the source of the wastewater for maximum protection of the piping system. The inlet and outlet piping shall be a minimum of 4 inches or the size of the building sewer, whichever is greater. Most jurisdictions require a sampling well on the discharging side of the separator so that an inspector can verify proper treatment or maintenance.

MAINTENANCE

The frequency of cleaning at any given installation will vary depending on use. The Sand Oil Separator should be inspected at least bi-annually. The High Oil Alarm system will notify of immediate servicing requirements.

When necessary, the separator should be pumped out by a licensed pumping company familiar with regulations regarding proper disposal.

SIZING

The oil/water separator is selected based on anticipated flow rate (gpm) and type influent discharged through the interceptor.

The flow rate can be estimated by summing up all the fixture units as listed in the plumbing code manual and converting this into flow rate (gpm). Once flow rate is established, ParkUSA uses a Mpak® proprietary computer-modeling program, which utilizes Stoke's Law, droplet size

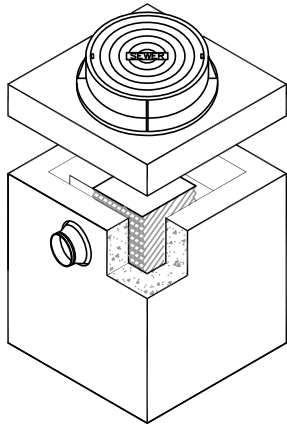
distribution, particle rise, and other relevant input to make accurate performance predictions. This sizing technique assures a "site-specific" custom design for every application.

For example, if the given flow has a 50 GPM value, the SOCMP needed would be a 500 gallons unit. Further design on plates efficiency can be also developed.

SOCMP Sizes Available

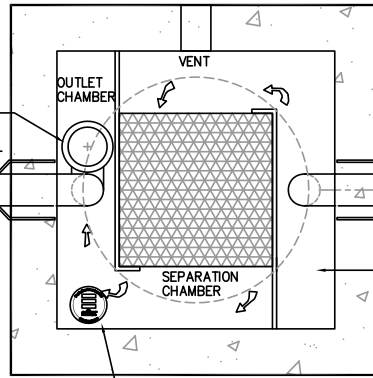
MODEL NO	STANDARD SIZE LENGTH X WIDTH	NOMINAL FLOW RATE (GPM)	INTERCEPTOR VOLUME GAL	NOMINAL OIL CAPACITY GAL
SOCMP-500	7'-10" X 4'-4"	50	500	250
SOCMP-750	7'-10" X 4'-4"	75	750	375
SOCMP-1000	8'-8" X 5'-4"	100	1,000	500
SOCMP-1500	9'-0" X 6'-0"	150	1,500	750
SOCMP-2000	9'-0" X 6'-0"	200	2,000	1,000
SOCMP-3000	12'-0" X 6'-0"	300	3,000	1,500
SOCMP-4000	15'-0" X 7'-6"	400	4,000	2,000
SOCMP-5000	15'-0" X 7'-6"	500	5,000	2,500
SOCMP-6000	15'-0" X 7'-6"	600	6,000	3,000
SOCMP-7000	18'-9" X 9'-0"	700	7,000	3,500
SOCMP-8000	18'-9" X 9'-0"	800	8,000	4,000
SOCMP-9000	18'-9" X 9'-0"	900	9,000	4,500
SOCMP-10000	18'-9" X 9'-0"	1,000	10,000	5,000
SOCMP-12000	21'-2" X 11'-2"	1,200	12,000	6,000
SOCMP-15000	21'-2" X 11'-2"	1,500	15,000	7,500

Call for sizes not listed or specific project requirements 888-611-7275.



AUTOMATIC OIL STOP VALVE

MAX PIPE SIZE IS 6"



PLAN VIEW

MAX PIPE SIZE IS 6"

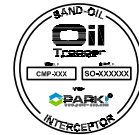
INLET

OUTLET

VENT

SEPARATION CHAMBER

INLET CHAMBER



NAMEPLATE INDICATING:
MFG: PARKUSA
888-611-PARK
WWW.PARKUSA.COM
MODEL: CMP
DATE MANUFACTURED

CMP-XXXX-XX-XXX

SEPARATOR SIZE
100 - 100 GALLON
150 - 150 GALLON
200 - 200 GALLON
350 - 350 GALLON
ETC...

PIPE SIZE
04 - 4"
06 - 6"
08 - 8"
10 - 10"
12 - 12"

MAXIMUM FLOW RATE
5 - 5 GPM
10 - 10 GPM
ETC...

APPLICATIONS

- MAINTENANCE WASHDOWN & GARAGES
- GOLF COURSES
- EQUIPMENT & TRANSPORTATION WASHDOWN FACILITIES
- CARWASHES
- STORMWATER RUNOFF
- SERVICE STATION FUEL DEPOTS
- MANUFACTURING FACILITY EFFLUENT WATER
- REMEDIATION WATER CLEANUP
- GENERAL INDUSTRY

SAND-OIL INTERCEPTOR SCHEDULE

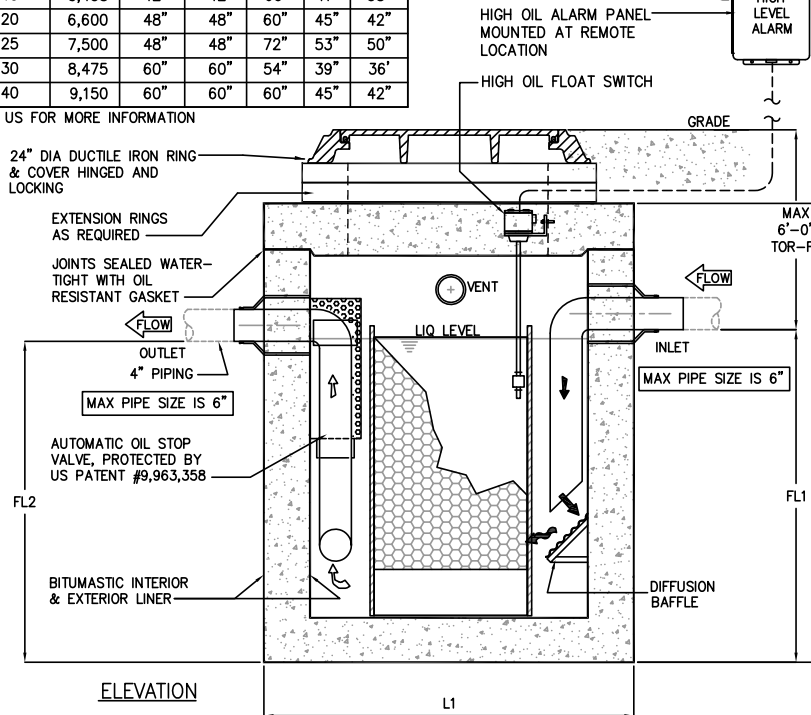
MODEL NO.	CAPACITY USGal	OIL CAP. US (GAL)	FLOW RATE (GPM)	EMPTY WT (LBS)	LENGTH L1	WIDTH W1	HEIGHT H1	INLET FL1	OUTLET FL2
CMP-100	100	50	10	5,200	42"	42"	54"	35"	32"
CMP-150	150	75	15	5,438	42"	42"	60"	41"	38"
CMP-200	200	100	20	6,600	48"	48"	60"	45"	42"
CMP-250	250	125	25	7,500	48"	48"	72"	53"	50"
CMP-300	300	150	30	8,475	60"	60"	54"	39"	36"
CMP-400	400	200	40	9,150	60"	60"	60"	45"	42"

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION

GUARANTEED PERFORMANCE
A certified performance analysis utilizing a proprietary computer program will accurately model systems to ensure that their effluent qualities meet the required discharge criteria (EPA and Local Codes)

Influent oily water contains oil droplets of many different sizes. These droplets rise at different rates. Park utilizes a statistical program that divides the droplets into ranges of sizes and calculates the rise rates of each range. This calculation determines which droplets the separator can capture.

Contact our Engineering Dept. @ 800-256-8041 for a free performance evaluation.



ELEVATION

L1

24" DIA DUCTILE IRON RING & COVER HINGED AND LOCKING

EXTENSION RINGS AS REQUIRED

JOINTS SEALED WATER-TIGHT WITH OIL RESISTANT GASKET

OUTLET 4" PIPING

MAX PIPE SIZE IS 6"

FL2

FL1

AUTOMATIC OIL STOP VALVE, PROTECTED BY US PATENT #9,963,358

BITUMASTIC INTERIOR & EXTERIOR LINER

VENT

LIQ LEVEL

INLET

MAX PIPE SIZE IS 6"

MAX 6'-0" TOR-FL

H1

FL1

DIFFUSION BAFFLE



GUARANTEED PERFORMANCE FOR CODE MAXIMUM OIL CONCENTRATION (SANITARY SEWER 100 PPM, STORM SEWER 15 PPM)

© Park 2016

Specifications

- CONCRETE :** Class I/II concrete with of design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth. Rated for H-20 Loading.
- REINFORCEMENT:** Grade 60 reinforced. No. 4 steel rebar to conform to ASTM A615 on required centers or equal. Bar bending and placement shall conform the latest ACI standards.
- D.I. CASTINGS:** Manhole frames, covers or grates are manufactured of ductile iron conforming to ASTM A536, AASHTO M306, & AASHTO M105 Standards. Manhole shall be nominal 24" diameter and be traffic duty.

Engineering Data

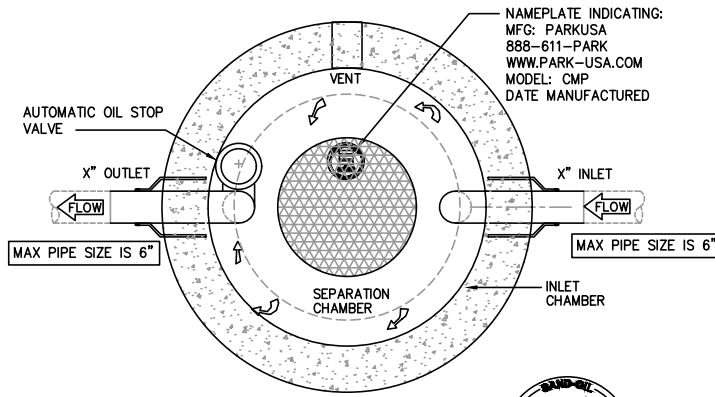
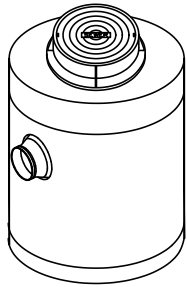
Interceptor is structurally and hydraulically engineered conforming to Uniform Plumbing Code. Nominal total liquid capacity and oil holding capacity as indicated. Recommended for flow rates of 5 to 25 GPM (consult Park for proper sizing). Manufacturer shall submit performance calculations for oil & water separation certified by a licensed professional engineer. Field excavation and preparation shall be completed prior to delivery of interceptor. Use dimensional data as shown.

PROJECT:	XX
CUSTOMER:	XX
ENGINEER:	XX
ORDER #:	XX
PROJ #:	XX
DATE:	XX



SAND-OIL SEPARATOR
MODEL CMP - 100 THRU 400 GALLONS

PM	DRN	CHK	DWG. NO.	REV.
DATE	06/16		CMP-1	A



CMP-XXXX-XX-XXX

SEPARATOR SIZE	100 - 100 GALLON
	150 - 150 GALLON
	200 - 200 GALLON
	350 - 350 GALLON
	ETC...
PIPE SIZE	04 - 4"
	06 - 6"
	08 - 8"
	10 - 10"
	12 - 12"
MAXIMUM FLOW RATE	5 - 5 GPM
	10 - 10 GPM
	ETC...



PLAN VIEW

MODEL NO.	CAPACITY USGal	OIL SPILL CAP (GAL)	FLOW RATE (GPM)	EMPTY WT (LBS)	DIA D	HEIGHT H	INLET FL1	OUTLET FL2
CMPR-100	100	50	10	3000	44"	54"	39"	36"
CMPR-150	150	75	15	4,800	44"	70"	55"	52"
CMPR-200	200	100	20	6,600	44"	88"	73"	70"
CMPR-300	300	150	30	7,850	58"	62"	47"	44"

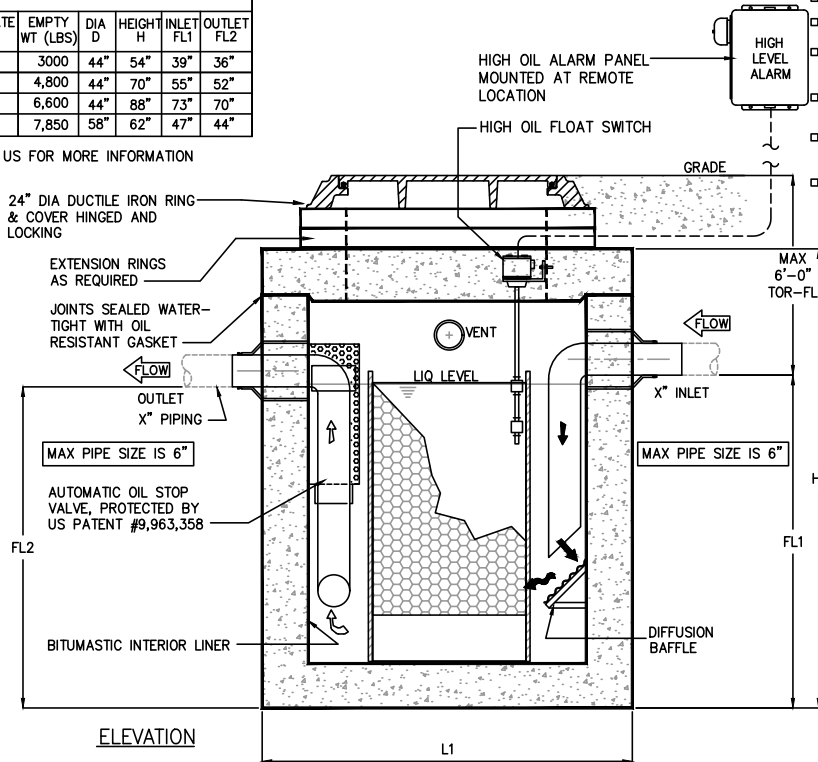
OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION

- APPLICATIONS
- MAINTENANCE WASHDOWN & GARAGES
 - GOLF COURSES
 - EQUIPMENT & TRANSPORTATION WASHDOWN FACILITIES
 - CARWASHES
 - STORMWATER RUNOFF
 - SERVICE STATION FUEL DEPOTS
 - MANUFACTURING FACILITY EFFLUENT WATER
 - REMEDIATION WATER CLEANUP
 - GENERAL INDUSTRY

GUARANTEED PERFORMANCE
A certified performance analysis utilizing a proprietary computer program will accurately model systems to ensure that their effluent qualities meet the required discharge criteria (EPA and Local Codes)

Influent oily water contains oil droplets of many different sizes. These droplets rise at different rates. Park utilizes a statistical program that divides the droplets into ranges of sizes and calculates the rise rates of each range. This calculation determines which droplets the separator can capture.

Contact our Engineering Dept. @ 800-256-8041 for a free performance evaluation.



ELEVATION



GUARANTEED PERFORMANCE FOR CODE MAXIMUM OIL CONCENTRATION (SANITARY SEWER 100 PPM, STORM SEWER 15 PPM) © ParkUSA. ALL RIGHTS RESERVED.

SPECIFICATIONS

- CONCRETE :** CLASS I/II CONCRETE WITH OF DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. RATED FOR H-20 LOADING.
- REINFORCEMENT:** GRADE 60 REINFORCED. NO. 4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL. BAR BENDING AND PLACEMENT SHALL CONFORM THE LATEST ACI STANDARDS.
- D.I. CASTINGS:** MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED OF DUCTILE IRON CONFORMING TO ASTM A536, AASHTO M306, & AASHTO M105 STANDARDS. MANHOLE SHALL BE NOMINAL 24" DIAMETER AND BE TRAFFIC DUTY.

ENGINEERING DATA

INTERCEPTOR IS STRUCTURALLY AND HYDRAULICALLY ENGINEERED CONFORMING TO UNIFORM PLUMBING CODE. NOMINAL TOTAL LIQUID CAPACITY AND OIL HOLDING CAPACITY AS INDICATED. RECOMMENDED FOR FLOW RATES OF 5 TO 25 GPM (CONSULT PARK FOR PROPER SIZING). MANUFACTURER SHALL SUBMIT PERFORMANCE CALCULATIONS FOR OIL & WATER SEPERATION CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER. FIELD EXCAVATION AND PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF INTERCEPTOR. USE DIMENSIONAL DATA AS SHOWN.

PROJECT : _____

CUSTOMER : _____

ENGINEER : _____

ARCHITECT : _____

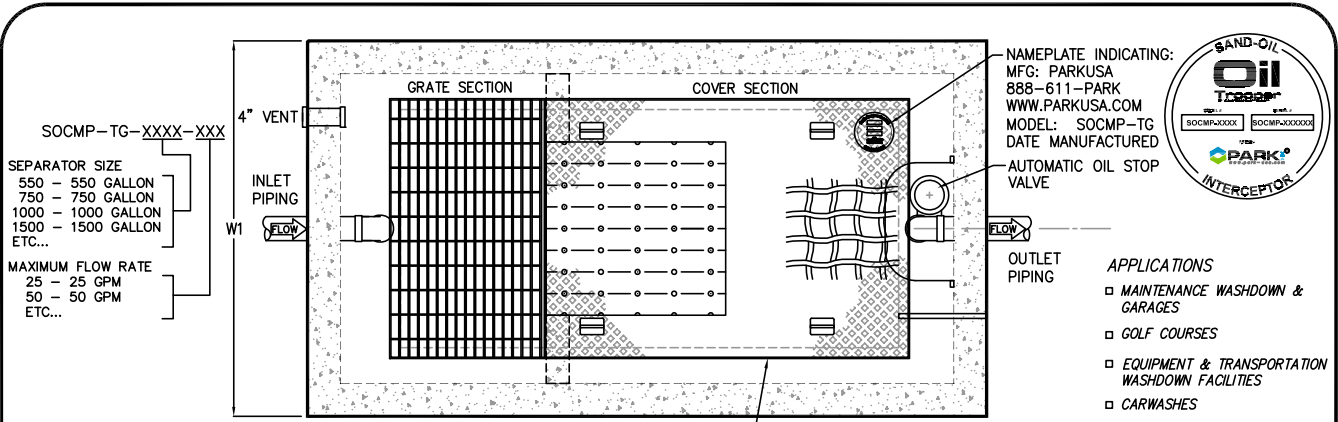
ORDER # : _____

DATE : _____



SAND-OIL SEPARATOR
MODEL CMP - 150 THRU 400 GALLONS

PM	DRN	ENG	DWG. NO.	REV.
DATE	08/18		CMPR-1	A

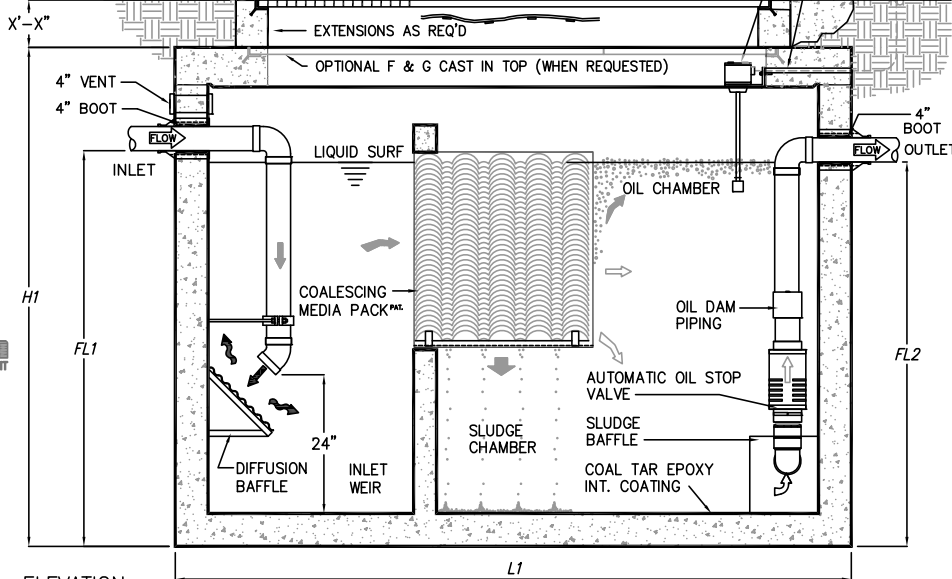


PLAN VIEW

SAND-OIL INTERCEPTOR SCHEDULE

MODEL NO.	CAPACITY USGal	OIL CAP. US (GAL)	EMPTY WT (LBS)	LENGTH L1	WIDTH W1	HEIGHT H1	INLET FL1	OUTLET FL2
SOCMP-500	500	250	9,500	7'-10"	4'-4"	4'-6"	3'-3"	3'-0"
SOCMP-750	750	375	9,900	7'-10"	4'-4"	6'-0"	4'-5"	4'-2"
SOCMP-1000	1,000	500	13,350	8'-8"	5'-0"	6'-0"	4'-9"	4'-6"
SOCMP-1500	1,500	750	16,050	9'-2"	5'-8"	7'-0"	5'-9"	5'-6"

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION
GRADE (GRASS OR ASPHALT)



ELEVATION

GUARANTEED PERFORMANCE FOR CODE MAXIMUM OIL CONCENTRATION (SANITARY SEWER 400 PPM, STORM SEWER 15 PPM)

APPLICATIONS

- MAINTENANCE WASHDOWN & GARAGES
- GOLF COURSES
- EQUIPMENT & TRANSPORTATION WASHDOWN FACILITIES
- CARWASHES
- STORMWATER RUNOFF
- SERVICE STATION FUEL DEPOTS
- MANUFACTURING FACILITY EFFLUENT WATER
- REMEDIATION WATER CLEANUP
- GENERAL INDUSTRY

GUARANTEED PERFORMANCE
A certified performance analysis utilizing a proprietary computer program will accurately model systems to ensure that their effluent qualities meet the required discharge criteria (EPA and Local Codes)

Influent oily water contains oil droplets of many different sizes. These droplets rise at different rates. Park utilizes a statistical program that divides the droplets into ranges of sizes and calculates the rise rates of each range. This calculation determines which droplets the separator can capture.

Contact our Engineering Dept. @ 800-256-8041 for a free performance evaluation.



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SPECIFICATIONS

CONCRETE : CLASS 1/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

MATERIALS: ACCESS FRAME & COVER SHALL BE FABRICATED WITH MIN. 1/4" THICK NONSKID FLOOR PLATE, BOLTDOWN, & LIFTING HANDLES. ALL MATERIALS TO BE CORROSION RESISTANT.

ENGINEERING DATA

INTERCEPTOR IS STRUCTURALLY AND HYDRAULICALLY ENGINEERED CONFORMING TO UNIFORM PLUMBING CODE. NOMINAL TOTAL LIQUID CAPACITY AND OIL HOLDING CAPACITY AS INDICATED. RECOMMENDED FOR FLOW RATES OF 5 TO 180 GPM (CONSULT PARK FOR PROPER SIZING). MANUFACTURER SHALL SUBMIT PERFORMANCE CALCULATIONS FOR OIL & WATER SEPERATION CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER. FIELD EXCAVATION AND PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF INTERCEPTOR.

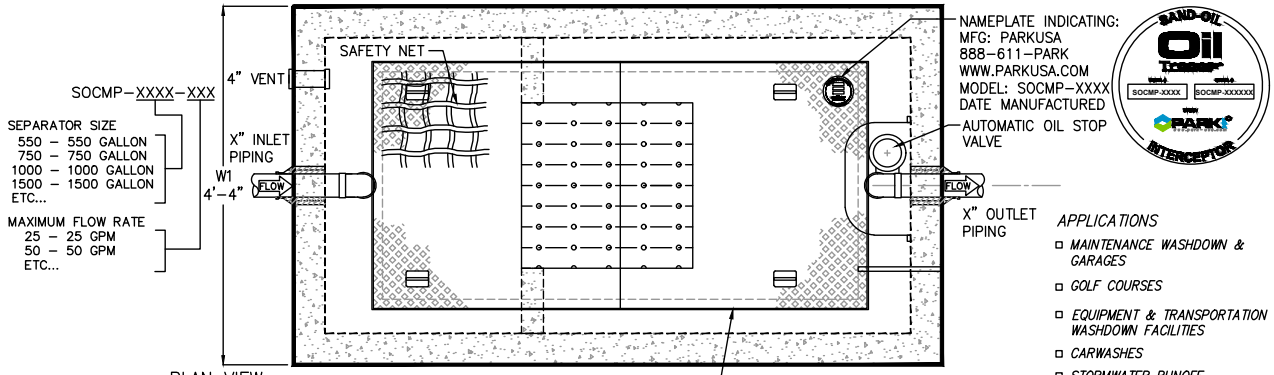
PROJECT :
CUSTOMER :
ENGINEER :
ORDER # :
PROJ # :
DATE :



SAND-OIL SEPARATOR SOCMP
TOP ENTRY GRATE INLET

PM	DRN	ENG	DWG. NO.	REV.
DATE	06/16	SOCMP-TG1		A

Wastewater
Systems



PLAN VIEW

SAND-OIL INTERCEPTOR SCHEDULE

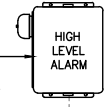
MODEL NO.	CAPACITY USGal	OIL CAP. US (GAL)	EMPTY WT (LBS)	LENGTH L1	WIDTH W1	HEIGHT H1	INLET FL1	OUTLET FL2
SOCMP-500	500	250	9,500	7'-10"	4'-4"	4'-6"	3'-3"	3'-0"
SOCMP-750	750	375	9,900	7'-10"	4'-4"	6'-0"	4'-5"	4'-2"
SOCMP-1000	1,000	500	13,350	8'-8"	5'-0"	6'-0"	4'-9"	4'-6"
SOCMP-1500	1,500	750	16,050	9'-2"	5'-8"	7'-0"	5'-9"	5'-6"
SOCMP-2000	2,000	1,000	21,250	9'-2"	5'-8"	8'-0"	6'-11"	6'-8"

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION

30x60 GALV. STEELPARKway™ FRAME & COVER, RATED FOR H2O TRAFFIC LOADING LOOSE

HIGH OIL ALARM PANEL MOUNTED AT REMOTE LOCATION

3/4" CONDUIT SLEEVE HIGH OIL FLOAT SWITCH

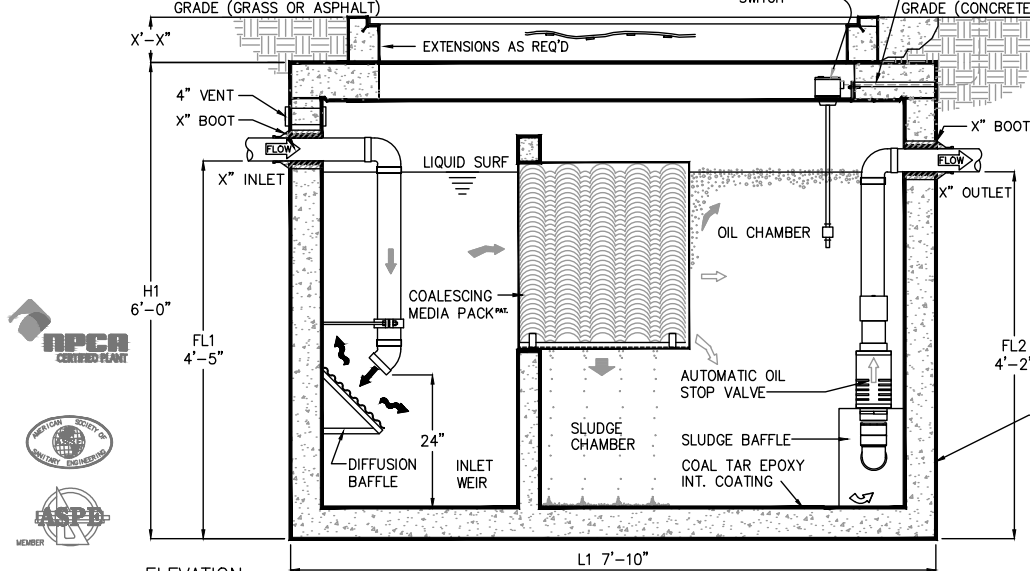


- APPLICATIONS**
- MAINTENANCE WASHDOWN & GARAGES
 - GOLF COURSES
 - EQUIPMENT & TRANSPORTATION WASHDOWN FACILITIES
 - CARWASHES
 - STORMWATER RUNOFF
 - SERVICE STATION FUEL DEPTS
 - MANUFACTURING FACILITY EFFLUENT WATER
 - REMEDIATION WATER CLEANUP
 - GENERAL INDUSTRY

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ELEVATION

GUARANTEED PERFORMANCE FOR CODE MAXIMUM OIL CONCENTRATION (SANITARY SEWER 400 PPM, STORM SEWER 15 PPM)

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SPECIFICATIONS

- CONCRETE:** CLASS I/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.
- REINFORCEMENT:** GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- MATERIALS:** ACCESS FRAME & COVER SHALL BE FABRICATED WITH MIN. 1/4" THICK NONSKID FLOOR PLATE, BOLTDOWN, & LIFTING HANDLES. ALL MATERIALS TO BE CORROSION RESISTANT.

ENGINEERING DATA
INTERCEPTOR IS STRUCTURALLY AND HYDRAULICALLY ENGINEERED. NOMINAL TOTAL LIQUID CAPACITY AND OIL HOLDING CAPACITY AS INDICATED. RECOMMENDED FOR FLOW RATES OF 5 TO 200 GPM (CONSULT PARK FOR PROPER SIZING). MANUFACTURER SHALL SUBMIT PERFORMANCE CALCULATIONS FOR OIL & WATER SEPARATION CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER UPON REQUEST. FIELD EXCAVATION AND PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF INTERCEPTOR.

A	.	.	.
REV	DATE	BY	DESCRIPTION
PROJECT:	.		
CUSTOMER:	.		
ENGINEER:	.		
ORDER #:	.	PROJ #:	.
DATE:	.	LOCATION:	.



www.parkusa.com 888-611-PARK

SAND/OIL INTERCEPTOR SOCMP
MODEL SOCMP 500 THRU 2000 GAL

PM	PC	DRN	ENG	DWG. NO.	REV.
.	.	.	.	SOCMP-1	.
DATE					



Model OTA
Alarm System

Model SOCMP

Features

- UPC listed and approved
- Precast concrete, fiberglass or steel construction
- Oil-water separation with oil detection and separation technology
- Certified performance
- Above or below grade installation
- Pedestrian or traffic rated
- Remote maintenance alarm
- Interior liners available
- Meets all building codes
- Low and easy maintenance

Sand-Oil Interceptors

Wastewater that contains significant amounts of oils or solids that interfere with the proper drainage and treatment of effluent water must be treated before being discharged into the sanitary sewer system. To comply with effluent water quality standards of the EPA Clean Water Act and local plumbing codes, a sand-oil interceptor for wastewater pretreatment is recommended.

The ParkUSA® OilTrooper® Model SOCMP is a sand-oil interceptor that consists of a multi-compartment basin and patented enhanced separation technology for sediment and oil separation.

Typical applications include vehicle maintenance and washrack facilities, fueling depots, industrial areas, parking lots, and storm water runoff. Engineers specify the OilTrooper sand-oil interceptor to ensure wastewater pretreatment meets project and code requirements.

OilStop Valve is protected by US Patent #9,963,358



WW | OILTROOPER
Standard

System Components

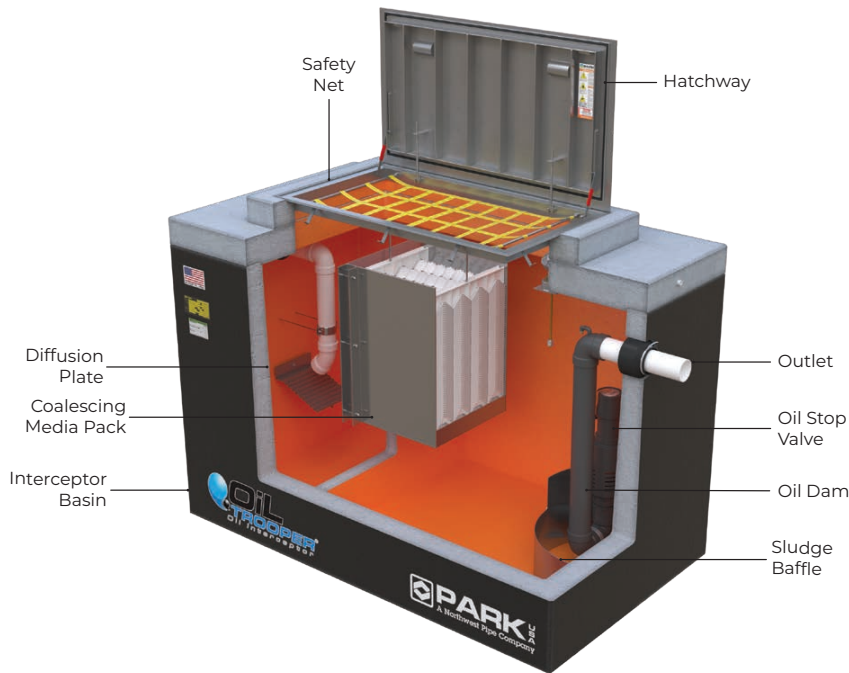
The ParkUSA Sand-Oil Separator presents the main components shown, described or listed below:

Sensors: Indicate water level inside unit.

Control Panel: Consisting of NEMA 4X intrinsic-safe panel with high oil/leak detection and internal tank sensors for easy use for the end-user.

Containment Vault: The shell of the unit can be constructed from Precast Concrete, Fiberglass, or Steel. Model names and configurations vary by material.

Coalescing Media Pack: Engineered coalescing media designed for oil separation.



How it Works

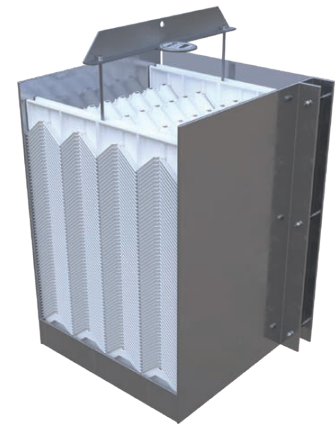
The function of the Sand-Oil CMP Separator is to intercept free oils/solids and retain them for periodic removal. The wastewater is treated by the separator in two stages. The initial stage of treatment occurs as the inflow strikes a corrugated diffusion plate. This process is known as the Buffalo-Morse Principle. Solids and oil are separated through velocity reduction and sinusoidal flow patterns. Heavy solids settle and 100 percent oil slugs rise immediately to the surface.

The second stage of treatment occurs as the wastewater flows through the Coalescing Media Pack (CMP). Both the smaller oil droplets and fine solids are progressively separated. The Coalescing Media Pack™ consists of closely spaced corrugated plates manufactured with an oleophilic (oil attracting) material. The corrugated pattern induces a sinusoidal laminar flow of the oily water mixture. Under laminar flow conditions, buoyancy forces cause oil droplets to rise until they adhere themselves to the oleophilic plates. Small oil droplets tend to coalesce into sheets of oil on the underside surfaces of the corrugated plates. The sinusoidal flow path also promotes a high incidence of droplet collision as the fluid flow constantly changes direction from a downward path to a vertical path. The coalescing oil rises to the surface in large globules through weep holes or gutters in the coalescing plate pack. Heavy solids are separated with the coalescing media and settle to the bottom of the basin.

Downstream, the wastewater encounters an oil dam that prevents collected oil from entering the outlet piping. An oil stopping valve is located at the exit piping of the interceptor to ensure oil-free wastewater discharge.

Visit oiltrooper.parkusa.com for more information and design assistance including an OWS performance analysis and specifications.

To request a quote or catalog, visit request.parkusa.com.



Coalescing Media Plates

As stormwater pollutants travel through the CMP (coalescing media plate pack) oil rises to the top and solids drop to the bottom through dedicated surfaces and weep holes. Plate supports at the bottom allow for easy removal of the solids that collect beneath the plates. Because of the steep angles and short travel distances, oils and solids are quickly released, eventually floating to the surface of the unit or settling to the bottom.

APPLICATIONS



Good to use
in BMPs



Municipal



Commercial



Industrial



Medical
Facilities

EleVader[®]
Elevator Sump System



PARK
USA
A Northwest Pipe Company

**ENGINEERING
FACTS**

GENERAL INFORMATION

ParkUSA's EleVader® is a product used to pump out liquids (usually oil and water) from the elevator pit. The unit is a passive gravity flow system for the separation of oil from oil-water mixtures. The design utilizes the difference in specific gravities between oil and water (buoyancy force) enhanced by the use of patented coalescing plates. The separator is designed to receive oily water by gravity flow and to process it on a once-through basis. The separator vessel is constructed of high strength precast concrete. The coalescing plates are manufactured of an oleophilic polypropylene.

The system is a complete, fully integrated, and packaged system which contains required alarm features. Per the ASME A17.1 Safety & Building Code, a sump pit and pump (50 GPM each shaft) shall be provided for all elevators with firefighter emergency operation. The code is to ensure the removal of water from the shaft, regardless of what contaminants are present. The EleVader is specially designed for this application.

The system is compliant to all plumbing codes (i.e. UPC, IAPMP). Providing high efficiencies on oil removal and flow treated, the ParkUSA EleVader is the leader in the market for these types of applications.

ELEVADER MODELS



Model EC: Concrete unit, usually designed for use below ground level.

Model ES: Steel unit, mostly used for projects where the unit is above ground level.

Model EX: Steel unit, used where space availability is limited.

In the event of a fire, significant amounts of water may be discharged from a building's elevator sprinkler system. This discharge can create several safety challenges for firefighters needing constant elevator access during emergencies. To address this safety issues, many states have adopted ASME Code A17.1-2007/CSA B44-07 which requires elevator pits to be capable of automatically removing a minimum of 3,000 gallons of discharge per hour (50 gpm) per elevator car. Each pump must be fully automatic, without need of manual intervention. The discharge piping is typically required to have an accessible check valve on the effluent side of the pump for service of the valve or pump. The pump should be located in a pit below the elevator shaft floor and should have an access cover at the level of the bottom of the elevator shaft. While ASME A17.1 addresses discharge requirements for elevator pits, there is still a need to comply with effluent water quality standards mandated by local plumbing codes. If the elevator is hydraulic, there must be an oil interceptor installed with the spill capacity of all hydraulic fluids in all cars. A sample well or test well should be installed on the effluent side of the interceptor before discharging into the sanitary sewer system. ParkUSA's Elevator Oil-Water Interceptor is specific to commercial applications requiring compliance to all relevant codes.

ParkUSA's EleVader® is a product used to pump out liquids (usually oil and water) from the elevator pit. The unit is a passive gravity flow system for the separation of oil from oil-water mixtures. The design utilizes the difference in specific gravities between oil and water (buoyancy force) enhanced by the use of patented coalescing plates.

FEATURES

- ASME A17.1 Elevator Code Compliant
- Indoor (free standing) and outdoor (buried) installations available
- Heavy-Duty Cast Iron Pump, Impeller and Stainless-Steel Hardware
- Oil/Water Resistant Cords and Stainless-Steel Mounting Hardware
- Prepacked and Pre-wired System for Easy Installation
- Unitized Control Panel with Easy User Interface (NEMA 4X)
- Remote Alarm Connection Ready to BAS or SCADA System
- Oil-Water Separator with Oil Detection and Separation Technology
- Meets all Building Codes

SYSTEM COMPONENTS

The ParkUSA Elevator Oil-Water Interceptor is available with the following components:

Steel Separator: The Separator is located freestanding (Model ES) on the floor near the shaft, floor or wall mounted (Model EX) or can be located outdoors (Model EC) & buried below grade. The separator is rated from 50 to 400 gpm depending on the quantity of elevator shafts to be served.

High Oil Alarm Panel (intrinsic safe): Indicates "High Oil Level" of the separator, in the event of a high accumulation of oil. The panel has a "Separator High Level" light & horn, a "Silence" button, and an auxiliary contact for a BAS System.

Pump Control Panel (intrinsic safe): The Control System consists of float sensors and a unified control panel (NEMA 4X weatherproof) that is wall mounted near the elevator shaft.

Elevator Sump Pump (explosion proof): Submersible Sump located in the sump area of the elevator. Each hoistway is required to have a pump capable of removing all fluids at 50 GPM per elevator car.

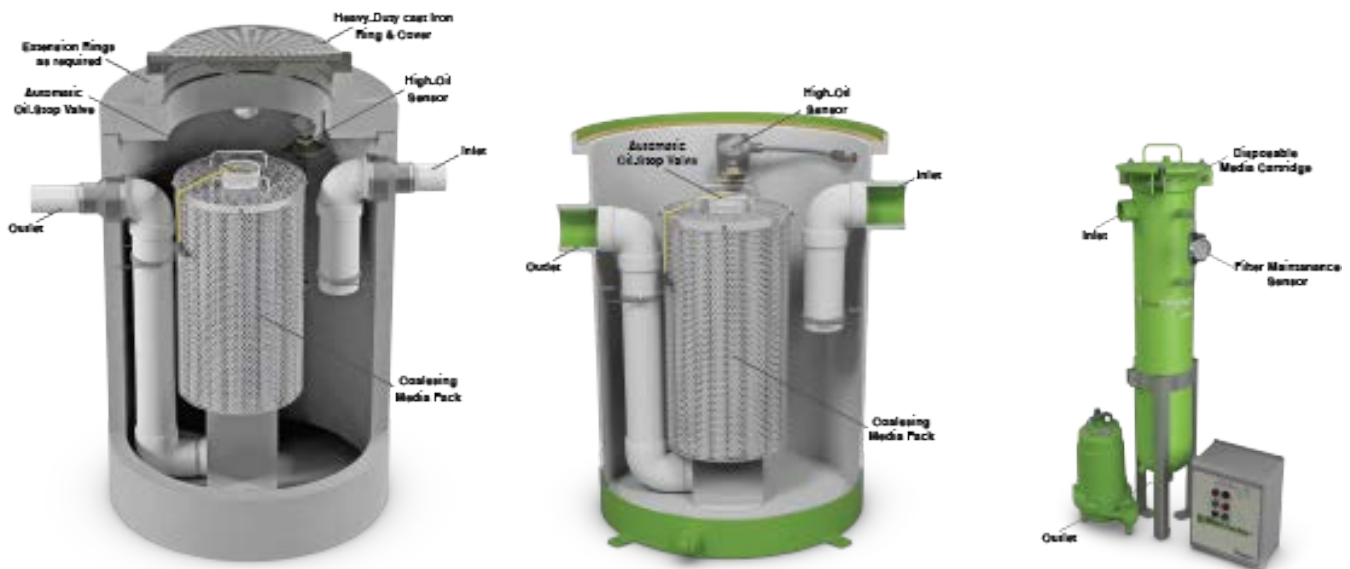
OPERATION

The function of the Elevator Oil-Water Interceptor is to intercept free oil/solids and retain them for periodic removal. The interceptor may be designed for either a "gravity flow" or "pumped flow" application. Oily wastewater flows into the inlet chamber then flows through the oleophilic coalescing plates to separate oils/solids from water. Oils rise to the surface within the coalescing plate pack and clarified

effluent discharges to the sanitary sewer via a sample well. Depending on the application, the oil-water interceptor may be installed below the elevator pit floor, at pit floor level, or at a remote location. The interceptor is constructed of steel, fiberglass, or precast concrete providing years of continuous service. The interceptor is divided into several compartments where elevator discharge oil will coalesce and reside on the surface.

The process taking place starts when the oil-water mixture enters the separator through the inlet elbow into the pre-separation chamber, proceeds through the plate inlet chamber, and makes a 180 degree turn to enter the coalescing plate pack. The oil in this mixture is usually in the form of droplets of various sizes. As the oil water mixture flows through the plates, the oil droplets tend to rise in the water due to the buoyancy effect. As the droplets rise, they come in contact with the underside of the plates and coalesce, forming a thin film of oil on the underside of the plates. This film flows upward along the plate surface until it reaches the plate peaks. There it accumulates in a thicker oil layer. Holes have been provided in the plates at the peaks so that the oil collected in this manner may "weep" through the holes and eventually come to the top of the separator.

The separated oil that comes to the top resides at the surface, or if equipped with an oil storage tank, the oil flows out over the adjustable skimmers. After flowing through the separator, the treated water gravity flows into a drain or an optional pump chamber. The plate pack is installed at a small angle to enhance the rise of the coalesced oil and to encourage settled solids particles to migrate against the water flow back into the area directly upstream of the plates. This discourages plugging of the pack by solids particles.



DESIGN CONSIDERATIONS

The ParkUSA EleVader Model may be constructed from several materials, such as concrete, steel, fiberglass, and polyethylene. The optimal material is directly related to specific project characteristics and client needs. There are standard and custom models available for this product, whose design depends on flow rate, contaminants concentration, and project location.

SIZING

The Oil-Water Interceptor is generally sized according to the local plumbing code. States that have adopted ASME A17.1 require that each elevator be able to remove 3,000 gal/hour. A typical method to determine the total fixture unit loading of the interceptor is to multiply the number of elevator cars times 50 gpm and allow for any additional fixture units designed to drain to the interceptor.

Concrete Unit Models

	ESC-100	ESC-150	ESC-200	ESC-300	ESC-400	ESC-500
CAPACITY US GAL	100	150	200	300	400	500
OIL SPILL CAP (GAL)	50	75	100	150	200	250
FLOW RATE (GPM)	50	100	150	250	350	450
ELEVATOR CABS	1	2	3	4	6	8
EMPTY WT (LBS)	4,987	5,438	6,600	8,475	9,150	10,050
LENGTH L1	42"	42"	48"	60"	60"	60"
WIDTH W1	42"	42"	48"	60"	60"	60"
HEIGHT H1	54"	41"	45"	39"	45"	53"
INLET FL1	35"	41"	45"	39"	45"	53"
OUTLET FL2	32"	38"	42"	36"	42"	50"

Other sizes are available. Contact us for more information.

Steel Unit Models

	ELV-100	ELV-150	ELV-200	ELV-250	ELV-300	ELV-350
ELEVATOR CABS	1	2	3	4	6	8
FLOW CAP GPM	50	100	150	200	250	300
TOTAL CAPACITY	100 GAL	150 GAL	200 GAL	250 GAL	300 GAL	350 GAL
OIL SPILL CAPACITY	50 GAL	75 GAL	100 GAL	125 GAL	150 GAL	175 GAL
DIA D	30"	30"	30"	30"	36"	36"
HEIGHT H	44"	60"	78"	92"	78"	90"
INLET FL1	35"	51"	69"	83"	69"	81"
OUTLET FL2	32"	48"	66"	80"	66"	78"

Steel EX Model

SYSTEM SIZE	ELEVATOR CABS	SEPARATOR MARK	SEPARATOR MODEL
ELVX-100	1	SP-1	EX-050

SEPARATOR DATA						
FLOW CAP GPM	TOTAL CAPACITY	OIL SPILL CAPACITY	DIA D	HEIGHT H	INLET FL1	OUTLET FL2
50	60 GAL	X GAL	8"	51"	43"	9"

SEPARATOR DATA						
FLOW CAP GPM	TDH	DISH SIZE	RPM	HP	VOLT / PH	PUMP
50	15'	1 1/2"	3450	.50	120 / 1	LIBERTY 280

Example:

A common application would be a building with four (4) elevator shafts with containment sumps discharging 50 gpm each. The Elevator Oil-Water Separator requirement would be 200 gpm.

MAINTENANCE

One of the most important features for the successful operation of the Elevator Oil-Water Interceptor is the maintenance program. Regardless of the size or design, an interceptor is only as good as its maintenance program. For this reason, most plumbing codes require the interceptor to be installed and located so that it will be easily accessible for inspection, cleaning, and removal of intercepted hydrocarbons.

The frequency of cleaning at any given installation will vary depending on use. The Elevator Oil-Water Separator should be inspected at least biannually. The High Oil Alarm system will warn facility of any immediate servicing requirements. When necessary, the separator should be pumped out by a licensed pumping company familiar with regulations regarding proper disposal.

After approximately 30 days of operation, the inlet area of the separator should be checked to determine if an excessive amount of oils and solids have accumulated. After approximately the first 1000 hours of operation, the inlet area should be cleaned as follows:

1. Remove cover.
2. Drain the water from the vessel.
3. The plate packs may either be cleaned in place or removed and cleaned. To clean the packs, first stop the flow to the unit, remove the oil, and drain the water.
4. For cleaning in place, connect a pressure water hose (at least 60 psi) to the special plate cleaning wand (available as an option). Provide a vacuum truck or other means of disposing of the sludge and dirt in the vessel. Turn on the water to produce a spray from the wand and insert slowly into each hole of the plate pack, starting at the upstream end. As the water flushes the dirt out of the plate packs into the inlet chamber, it should be removed by the vacuum hose or to an oily water sewer.

ELEVATOR SUMP PUMP SYSTEM

General
The contractor shall furnish and install a ParkUSA Elevator Model ELV-AX complete pump, separator, and control and alarm system as shown on the drawings. Pump(s) shall be provided for each elevator hoistway.

The system shall be capable of pumping all water & fluids automatically from the elevator pit as required by ASME A17.1/CSA B44 Safety Code for Elevators and Escalators, 2007, Section 2.2.2.5. The system shall function automatically to remove water and fluids from the pit automatically without any human intervention. Systems that do not remove all the fluid including oil are not compliant and will not be accepted.

An oil-water separator or equivalent protection shall be used to treat oily wastewater automatically from the elevator pit prior to discharge into the public sanitary sewer as required. Pumping into the storm sewer is not permitted. Systems that do not remove the oil will not be accepted.

Sump Pump

A submersible sump pump is located in the sump area of the elevator (refer to plan drawings). The sump pump shall be as specified on the schedule, heavy duty submersible type, capable of pumping water, water/oil and oil at a minimum capacity of 50 GPM @ 20' TDH, (3000 GPH) as per ASME A17.1 Section 2.2.2.5 (2007) and 100 GPM @ 30' TDH. The pump shall be constructed and tested to meet UL 778 standards and shall include thermal overload protection. Refer to the schedule for capacity and electrical requirements. The pump shall be capable of operating with the water level covering only 20% of the motor casing and shall operate automatically either continuously or intermittently as required by the on-off float switch control. The pump shall have a size 1-1/4" minimum discharge connection. The motor housing and fastening bolts shall be constructed of 304-Stainless Steel and have carbon ceramic seals. The pump shall have a semi-open, hand-coding, torque multiplier and shall be designed for floor mounting complete with support legs. A stainless chain shall be provided for easy maintenance.

Oil/Water Separator

The separator is located either freestanding, or recessed on floor near the shaft, or located outdoors buried below grade. Refer to the schedule for capacity and size requirements. The separator unit is rated from 50 to 200 GPM depending on the quantity of elevator shafts to be served, 50 GPM or 3000 GPH as per ASME A17.1 Section 2.2.2.5 (2007). The oil/water separator shall be a pre-engineered enhanced gravity separator capable of treating wastewater discharge free of petroleum hydrocarbons, concentration of less than 100 parts per million. Operating range of the influent is 40° to 180°F and ambient air temperature from 0°F to 140°F. The specific gravity of the oils at these operating temperatures is .70 to .95. The separator shall be designed to withstand static and dynamic hydraulic loadings while empty and during operation. The tank shall be constructed of 4500 psi precast concrete conforming to ASTM C-813 for tanks, weirs, flow distributors, and energy dissipater devices. All internal components shall consist of corrosion resistant materials or die epoxy coating. All welding shall be according with AWS D-1.1 to provide watertight joints. The separator shall have a removable steel access cover with a heavy duty, bonded and reinforced plastic material and assembled into modules with 304 stainless steel materials. Metals assembly shall be self-cleaning and removable.

Control System

The control system shall consist of float sensors and a single control panel (NEMA 4X weatherproof) that is wall mounted near the elevator shaft. The control panel shall be constructed and tested to meet UL508 standards and shall be housed in a weatherproof NEMA 4X electrical enclosure with a wiring terminal strip for field wiring to the J-Box in the hoistway.

The control panel shall have the following functions:

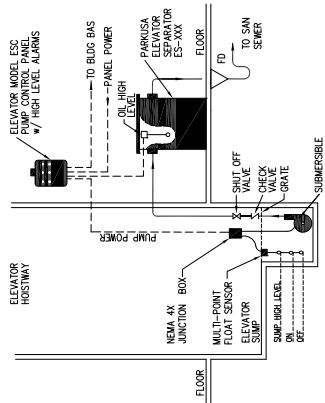
- Operate the sump pump, "On/Off" depending on shaft/water levels. The panel shall have a "Hand-Off-Auto" switch, a "Pump Run" light, and auxiliary contacts for a BAS system.
- Indicates "Sump High Level" of the elevator shaft. In the event of pump malfunction, the panel shall have a "Sump High Level" illuminated red light and high decibel warning horn, a "Silence" switch and auxiliary dry contacts for BAS system.
- Indicates "High Oil Level" of the separator. In the event of a high accumulation of oil in the separator, the panel shall have a "Separator High Level" illuminated red light & high decibel warning horn, a "Silence" switch, and auxiliary dry contacts for BAS system. NOTE: The presence of oil DOES NOT prevent the pump from operating.

The panel also includes a separate over-current relay and field adjustable motor overload having a range of 5 to 15 amps, factory set at 8 amps for this pump application. The control panel shall have a combination manual "Reset/Stop" to test switch for motor overload, with both automatic, manual reset and control diagnostics. The control system must be factory set for automatic overload restart.

The control system shall include three field adjustable float switches located in the sump: Pump Off, Pump On, and High Level. Provide a factory prewired NEMA 4X water-tight junction box with a din rail mounted wiring terminal strip. Provide factory installed wiring of pump and floats into a NEMA 4X junction box. All cables between the pump and junction box shall be a minimum of 6' long per NEC 2008. The cable shall be heavy usage, water-tight and oil resistant. The floats and oil sensing probes shall be factory mounted on the pump housing. All cable entries into the J-Box from the pump pit shall have NEMA 4X water-tight cord grips. The oil sensing probe is to be factory mounted and positioned within the separator and factory tested as a complete system.

Acceptable Manufacturers:

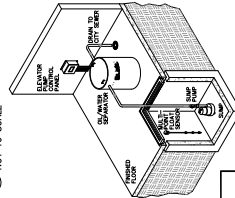
ParkUSA Elevator System, 888-611-PARK, www.park-usa.com or Engineered pre-approved equal, provided all of the specifications are met.



1 ELEVATOR SUMP DETAIL
NOT TO SCALE (ABOVEGROUND SEPARATOR)

SYSTEM MODEL	SEPARATOR DATA				SUBMERSIBLE PUMP DATA					
	SEPARATOR CAPACITY (GPM)	SEPARATOR HEIGHT (FT)	SEPARATOR INLET DIA. (IN)	SEPARATOR OUTLET DIA. (IN)	PUMP CAPACITY (GPM)	PUMP TDH (FT)	PUMP RPM	PUMP HP	VOLT/PH	
ELV-100	50	100	50	30	44	35	32	50	42" 2" 1450 50	115/1
ELV-150	100	150	50	30	60	51	48	100	37" 2" 1450 1	115/1 OR 230/1
ELV-200	150	200	50	30	78	69	66	150	15" 1 1/2" 1750 1.0	230/1 OR 230/460/3
ELV-250	200	250	50	30	96	87	84	200	15" 2" 1750 1.5	230/1 OR 230/460/3
ELV-300	250	300	50	30	114	105	102	250	15" 2" 1750 2.0	230/1 OR 230/460/3
ELV-350	300	350	50	30	132	123	120	300	15" 2" 1750 2.5	230/1 OR 230/460/3
ELV-400	350	400	50	30	150	141	138	350	15" 2" 1750 3.0	230/1 OR 230/460/3
ELV-450	400	450	50	30	168	159	156	400	15" 2" 1750 3.5	230/1 OR 230/460/3
ELV-500	450	500	50	30	186	177	174	450	15" 2" 1750 4.0	230/1 OR 230/460/3

3 ELEVATOR SUMP SYSTEM SCHEDULE
NOT TO SCALE



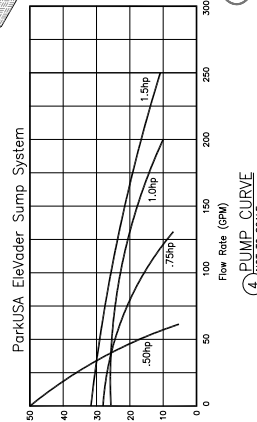
© Park, 2016

PROJECT :	
CUSTOMER :	
ENGINEER :	
ORDER # :	
DATE :	

PARK
ELEVATOR SUMP SYSTEM

ElevVader
Elevator Sump System

Elevator Sump System - One (1) Hoistway	
Model:	ELV
REV.	A
DATE	04-10-16
DRN	
ENG	
DWG. NO.	ELVS-1H-DD



- NOTES**
- SEPARATOR BASK WITH INTERIOR/EXTERIOR EPOXY FINISH
 - GASTITE REMOVABLE STEEL ACCESS COVER w/ NEOPRENE GASKET, SECURED w/ SS BOLTS
 - 2" x 3" OR 4" NPT STEEL FULL CPG AT INLET PUMP
 - 1/2" NPT STEEL FULL CPG AT INLET PUMP
 - 2" OIL DRAIN - NPT FULL CPG w/ PLUG
 - 2" VENT - NPT HALF CPG w/ PLUG
 - 2" DRAIN - NPT HALF CPG w/ PLUG
 - 2" PING BY OTHERS

2 ELEVATOR SEPARATOR DETAIL
NOT TO SCALE



Model ES



Features

- UPC listed and approved
- ASME A17.1 elevator and building code compliant
- Patented Design
- Submersible sump pump
- Oil/water separator
- Easy installation and maintenance
- Easy Operation
- Made in the USA - EleVaders are made in America and meet the requirements of the Buy America Act

Elevator Sump System

The EleVader[®] is a product that automatically removes oily water from elevator pits. Building codes require the automatic removal of all liquids from elevator shafts. Elevators are susceptible to failure during an emergency due to the water-filled shafts. Oily water must be pretreated before being discharged to the public sewer.

The EleVader[®] is a complete solution to pump, pretreat, and automatically monitor liquid levels in the elevator shaft. The EleVader is ASME A17.1 code compliant and Uniform Plumbing Code Listed.



Compatible with all elevator and lift systems including:



System Components

The ParkUSA® EleVader® oil/water interceptor is available with the following components:

Elevator sump pump: Submersible sump located in the sump area of the elevator. Each hoistway is required to have a pump capable of removing all fluids at 50 gpm per elevator car.

Oil/water separator is located freestanding on the floor near the shaft, or can be located outdoors buried belowgrade.

Available Models:

Model ES - our most popular design for freestanding applications

Model EC - for direct-bury applications

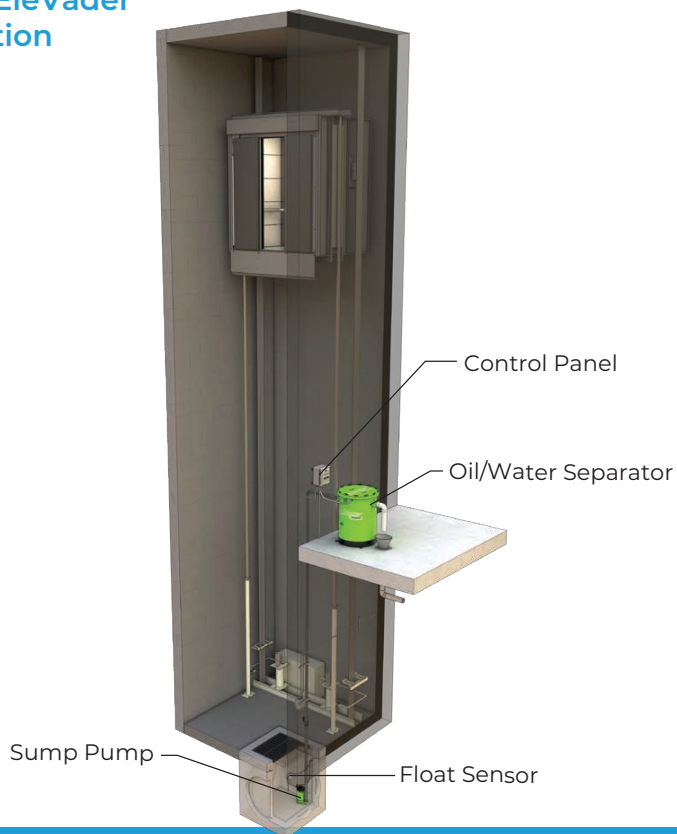
Model EX - for freestanding and space saving applications

Sump alarm panel (intrinsic safe): Indicates “high sump level” or “high oil level” of the separator in the event of a high accumulation of oil. The panel has a “separator high level” light and horn, a “silence” button, and an auxiliary contact for a building automation system (BAS).

Visit elevader.parkusa.com for more information and design assistance.

To request a quote or catalog, visit request.parkusa.com.

Typical EleVader Application



How It Works

As water and oil accumulate in the elevator sump pit, a float sensor will activate the sump pump. The pump moves the oily water to the adjacent oil/water separator. The separator uses patented technology to effectively remove oil from the wastestream and safely retain oil for future removal. The pretreated oil-free wastewater drains into a floor drain that discharges into the sanitary sewer.

The EleVader® control panel monitors the sump pump activity and allows for manual or automatic pump operation. The fluid levels are monitored for the elevator pit and the separator. The EleVader® provides a safe, seamless, and code-approved solution for managing water in all elevator pits.

Each elevator shaft is required to have a pump capable of pumping 50 gpm per elevator cab. EleVader® configurations are available to serve multiple shafts and cabs.



APPLICATIONS



OIL STOP VALVE




PARK
USA
A Northwest Pipe Company

ENGINEERING FACTS

GENERAL INFORMATION

ParkUSA's Oil Stop Valve (OSV) is a device whose design is based on gravity differential separation forces. It is a product used to stop the flow passing through a separator tank when the oil levels go over the permitted limit. The OSV functions by the buoyancy theory, a moving plastic sphere with specific gravity of 0.9 is used as a tool to stop the flow at the outlet. In water, the sphere will float and the flow is maintained continuous. However, when there is accumulation of oil around the sphere, the buoyant force will decrease and the sphere will tend to sink, this causes the obstruction of the outlet and the flow is stopped. Normally, the valve is closed when the oil level is at about 4 inches above the bottom of the float.

MODELS



Standard Model



High Flow Model

Current Oil Stop Valve models includes:

Standard Model: Unit used in most types of separators, it treats low to medium flow rates (up to 400 GPM)

High Flow Model: Unit used for special engineered products, it treats high level flow rates

SYSTEM COMPONENTS

The ParkUSA OSV possesses the following components:

- Float, with design specific gravity of 0.9
- Float compartment, that contain the float and where the gravity-mechanical process takes place
- Piping, where the flow is directed
- Release cable, that holds the float so it can be manually released when needed

OPERATION

The function of the OSV is to stop the flow at the moment oil levels go high. For an optimal operation, the float needs to be completely submerged, to maintain the operable capacity of the device. The valve is designed for easy operation, and it is mostly used in oil/water gravity differential separators and media type separators.

DESIGN CONSIDERATIONS

The valve is designed to properly function at required flows. Devices working at unassigned flow rates will cause the flow obstruction by the float, under-design is never recommended on these devices. At the same time, the outlet center line is required to be below the water level at a distance equal or greater than the expected head loss.

ParkUSA's Oil Stop Valve (OSV) is a device whose design is based on gravity differential separation forces. It is a product used to stop the flow passing through a separator tank when the oil levels go over the permitted limit.

FEATURES

- Automatic gravity operation device
- Easy installation and maintenance
- High flow rate models available
- Material of construction is resistant to corrosion and tough environments
- Versatility to operate together with alarm and sensor systems
- Flexible design to work with different oil types

MAINTENANCE

At the time maintenance is needed, the general steps for the process is:

1. Remove solids from bottom of separator as required.
2. With water level in the separator at outlet invert, push the cable downwards, the float will go down.
3. Release the cable. The float should rise up to the original position. If this procedure was successful the valve is working properly.
4. This procedure should be performed at least yearly.

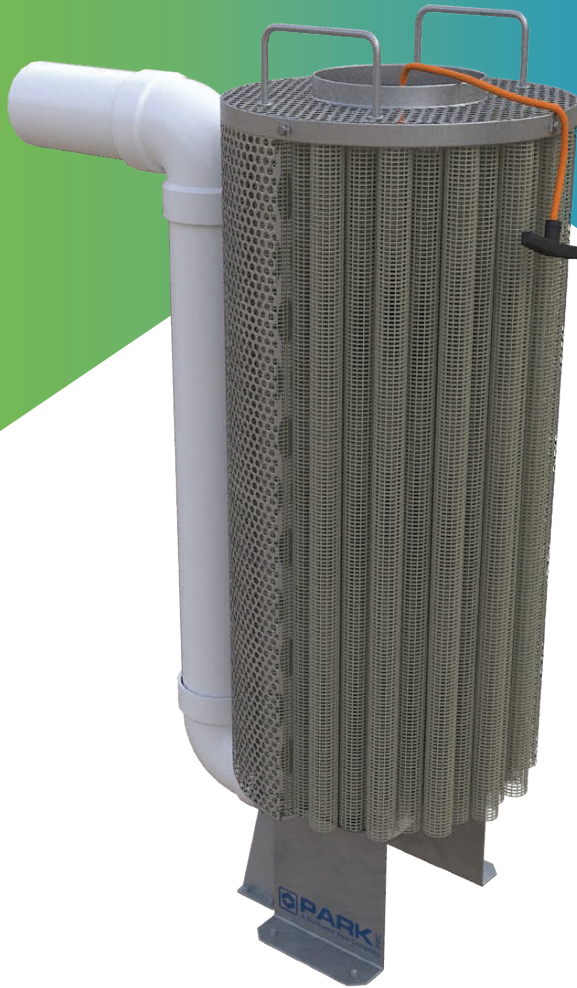
SIZING

The Oil Stop Valve sizing will depend directly on piping size and on flow rate. See below Table:

OSV Sizes Available

OSV MODEL	PIPING SIZE (INCHES)	FLOW RATE (GPM)
OSV-1	4	150
OSV-2	6	350
OSV-3	8	600

Note: Special case-by-case models are available for configurations of piping and flow rate



Oil Stop Valve

ParkUSA® OilStop™ Valve (OSV) is a device designed to prevent environmental catastrophe in the event of an oil or hydrocarbon spill. The OilStop meets EPA Spill Control and Counter Measures (SPCC) requirements. The patented, yet simple passive design of the OSV is automatic and requires little maintenance.

The OSV can be used to enhance the operation of oil-water separators, inlets basins, and spill containment vaults and manholes. The OSV is an added assurance of non-oily water discharge.

OilStop Valve is protected by US Patent #9,963,358

OilStop™



Features

- Standard Sizes from 4" to 14"
- Very reliable and long lasting
- Only periodic inspections needed
- New or retrofit applications environments
- Easy installation and maintenance
- Can be removed/replaced without entering basin
- Corrosion resistant designed for rugged environments
- No electric power required
- Converts existing drains to secondary containment



WW OIL STOP VALVE
Standard

OSV Model	Outlet Size (mm)	Material (2)	Peak Flowrate (1)		Configuration	No. of Valves
			gpm	lps		
OSV-41	4 (100)	PVC/HDPE	160	10	4 x 1	
OSV-41-SS		SS304				
OSV-61	6 (150)	PVC/HDPE	360	23	6 x 1	
OSV-61-SS		SS304				
OSV-62	8 (200)	PVC/HDPE	600	39	6 x 2	
OSV-62-SS		SS304			8 x 1	
OSV-63	10 (250)	PVC/HDPE	900	57	6 x 3	
OSV-63-SS		SS304			10 x 1	
OSV-64	12 (300)	PVC/HDPE	1400	88	6 x 4	
OSV-64-SS		SS304			12 x 1	
OSV-65	14 (350)	PVC/HDPE	1720	108	6 x 5	
OSV-65-SS		SS304			14 x 1	

1. Flow rate @ 4 ft/s (1.2 m/s)
2. Stainless Steel is recommended for high temperature applications <130F
3. Larger outlet sizes are available

OSV Options

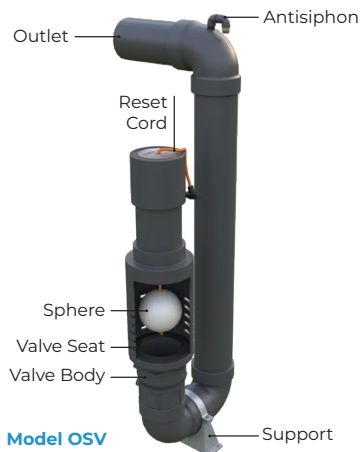
- Slave Valve for dry vault applications
- Coalescing and filter media
- Custom designs for specialized fluids
- Complete separator, manhole, or basin assemblies
- Alarm and sensor systems

Applications

- Mining
- Transformer stations
- Tank farms
- Oil production
- Commercial fueling stations
- Power plants
- Junk/salvage yards
- Bus depots
- Airports & hangers
- Rail yards
- Truck terminals
- Marine terminals
- Maintenance facilities
- Military installations
- Vehicle fleets



Model OSV-SS



Model OSV

How It Works

The OilStop Valve functions by the buoyancy theory, and a ballasted sphere is the only moving part.

The sphere is weighted with a specific gravity of 0.90 (floats in water; sinks in oil). As long as the sphere is surrounded by water, the sphere will float, opening the valve. However, in the presence of oil or any fluid with a specific gravity less than .90, the sphere will sink, closing the valve.

Normal Condition

Water Surrounds the sphere causing it to float; the valve is OPENED, allowing oil-free water to discharge. As oil starts to accumulate around the sphere, the sphere will sink lower.

Spill/High Oil Condition

Oil Surrounds the sphere causing it to sink; the outlet is CLOSED, preventing oil/water from discharging.

Resetting the valve after an incidental closing due to oil or excessive high flow can be performed by pulling on the reset cord, avoiding the need for Confined Space Entry protocols.

Visit osv.parkusa.com for more information and design assistance.

To request a quote or catalog, visit request.parkusa.com.

APPLICATIONS



Good to use
in BMPs



Commercial



Truck Terminals
Railroads



Municipal



Industrial



Low Impact
Development



PARK
USA
A Northwest Pipe Company

**ENGINEERING
FACTS**

GENERAL INFORMATION

The ParkUSA Heliceptor is a product designed to separate fuel from water. The use of patented coalescing media plates to retain fuel, along with the automatic fuel stop valve, make this separator essential on heliport projects.

The modern helicopter is one of the most versatile transportation vehicles known to man. The helicopters ability to operate from minimal real estate has given it the capability of providing a wide variety of important services to any community which integrates the helicopter into its local transportation system. Typical applications utilizing helicopters are Commuter Shuttles, Disaster Relief, Air Ambulance, Police Departments, Utility Companies, and Radio/TV Stations.

The helicopter requires a designated area for takeoffs and landings, the heliport. Heliports range from large, elaborate facilities to small private heliports consisting of a windsock on a grass area with a clear approach. Heliports are designed in accordance with local codes and Federal Aviation Administration recommendations.

HELICEPTOR MODELS



HFS-C Series Interceptor



HFS-S Series Interceptor



HFS-F Series Interceptor

A special consideration should be made for heliports located on elevated pads and building rooftops. These applications usually have water drainage systems, which drain rainwater from the heliport. A potential fire hazard exists from fuel entering into the drainage system. A fuel spill may occur during aircraft fueling or a helicopter crash landing.

To minimize this fire hazard, a fuel-water separator is recommended to separate fuel from the wastewater. The fuel water separator will also ensure effluent water quality standards mandated by the EPA and local plumbing codes.

The ParkUSA Heliceptor is a product designed to separate fuel from water. The use of patented coalescing media plates to retain fuel, along with the automatic fuel stop valve, make this separator essential on heliport projects.

FEATURES

- Enhanced separation technology of hydrocarbons from water
- Certified performance
- Direct bury or freestanding
- Unitized control panel with easy user interface (NEMA 4X)
- Remote alarm connection ready to BAS or SCADA system
- Low maintenance
- Available in steel, precast concrete or polyethylene construction

MODELS

There are currently three models available for the ParkUSA Helicopter unit, these configurations are given by the material of construction:

The ParkUSA HFS-C Series Interceptor is manufactured of Class II 4500 PSI precast concrete. Pre-casting the concrete shell insures that all units achieve structural and physical uniformity. The units are structurally engineered for H-20 truck loading and can be buried without any need for any other structural protection. The unit is of monolithic construction at bottom and walls to insure against joint leakage.

The ParkUSA HFS-S Series Interceptor is of ¼-inch thick ASTM A36 carbon steel. All welding is performed in accordance to American Welding Society D1.1 standards. The inlet, outlet, vent, and drain connections shall be standard duty Class 150 PSI. Interceptor shall have lifting lugs, gasketed access covers, site glass, makeup water valve port, and support beams. The interceptor shall be coated inside and outside with a fire retardant and corrosion resistant coating system. The coalescing media pack is of modular construction for easy maintenance and constructed of noncorrosive materials.

The ParkUSA HFS-F Series Interceptor is manufactured fiberglass or plastic and is used where lightweight construction is required.

SYSTEM COMPONENTS

The ParkUSA HeliCepter Fuel-Oil Interceptor includes the following standard & optional components:

- Elevated Stands & Ladders
- Dual Wall Construction
- Stainless Steel Construction
- UL 2085 Fuel Storage Tank
- Concrete Containment Vault
- High Level Monitoring Sensors & Controls
- Precast Concrete, Steel or Composite Separator Basin
- Access covers or hatchways
- Access ladders
- Safety hatch nets
- High-level alarm and control panel

OPERATION

The function of the Fuel-Water Separator is to intercept free fuel and oils from the heliport drainage and then retain it for removal. The ParkUSA Series HFS Interceptor utilizes similar technology in separating water and solids from aviation fuels. The Coalescing Media Pack offers enhanced separation of the hydrocarbons.

The wastewater flows through the separator into the inlet chamber, which is separated by an inlet weir. Heavy solids settle and 100 percent fuel/oil slugs rise immediately to the surface. The remaining fuel laden wastewater flows through a Coalescing Media Pack (CMP). Both the smaller hydrocarbon droplets and fine solids are progressively separated. Downstream, the seal dam prevents collected fuel

from entering the outlet piping. Hazardous fumes are vented from the separator to a designated vent to prevent fumes from entering the public sewer.

The Coalescing Media Pack consists of closely spaced corrugated plates manufactured with an oleophilic (hydrocarbon attracting) material. The corrugated pattern induces a sinusoidal laminar flow of the oily water mixture. Under laminar flow conditions, buoyancy forces cause hydrocarbon droplets to rise until they attach themselves to the oleophilic plates. Small hydrocarbon droplets tend to coalesce into sheets on the underside surfaces of the corrugated plates. The sinusoidal flow path also promotes a high incidence of droplet collision as the fluid flow constantly changes direction from a downward path to a vertical path. The coalescing hydrocarbon rises to the surface in large globules through weep holes or gutters in the coalescing plate pack.

DESIGN CONSIDERATIONS

For general commercial heliport applications, the standard Fuel-Water Separator is recommended. The parameters used in designing these gravity flow units are: ambient temperatures (40° - 110° F), standard atmospheric conditions, fuel - water specific gravity differential of 0.15, pH of six - eight, and an average influent fuel concentration of 5000 ppm or less. The resultant effluent fuel concentration of the wastewater should be less than 400 ppm for public sanitary sewer, or 15 ppm for discharge into storm sewer conforming to EPA regulations.

The fuel - water separator should be located so as to intercept the heliport wastewater drainage from the public sewer. The separator should be installed and located so that it will be easily accessible for inspection, cleaning, and removal of separated waste products. There should be an adequate number of separator access openings to permit cleaning and/or removal of the coalescing plate packs. The separator should be located near the heliport for maximum protection against fire hazard. The inlet, outlet, and vent piping shall be adequately sized (minimum of 4 inches).

SIZING

The fuel-water separator is selected based on anticipated rainwater flow rate (gpm) and the fuel spill capacity through the separator.

The flow rate is determined by the maximum amount of rainwater drainage from the heliport. The National Weather Service and the Administrative Authority having jurisdiction should be consulted when determining the rate of rainfall for the area of the country in which the heliport is to be located.

The fuel spill capacity of the separator is determined according to the largest fuel capacity of all the aircraft that could use the heliport. The fuel spill capacity of the separator should meet or exceed this capacity.

Heliport Interceptor Sizing Worksheet															
Subject: _____				Date: _____											
Project Name: _____				By: _____											
City: _____															
State: _____															
Step 1	Testing for Flow Rate:														
	Heliport Area Length (Ft)	x	Width (Ft)	x	Rainfall Intensity (In/Hr)										
	<input style="width: 100px;" type="text"/>		<input style="width: 100px;" type="text"/>		<input style="width: 100px;" type="text"/>										
				x	Hr/Min x Gal/Cu Ft x Ft/In 0.0104										
				=	<input style="width: 100px;" type="text"/> GPM										
Select From Rainfall Table 2-1 Rate 100 Yr / 60Yr Min.															
Step 2	Testing for Spill Capacity														
Select Largest Helicopter Type from Table 2															
	Manufacturer	Model			Min. Capacity GAL										
	<input style="width: 200px;" type="text"/>	<input style="width: 200px;" type="text"/>			<input style="width: 100px;" type="text"/>										
Step 3	Select Interceptor Size														
From Table 1, Select Interceptor Using the Largest of the Values Determined in Step #1 or Step #2															
	From Step #1 Min. Flow Rate Min. Capacity <input style="width: 100px;" type="text"/> GPM	<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="padding: 5px;">Interceptor Selection</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">ParkUSA Model HFS-</td> <td style="padding: 5px;"><input style="width: 100px;" type="text"/></td> </tr> <tr> <td style="padding: 5px;">Rated Capacity</td> <td style="padding: 5px;"> <table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td style="padding: 5px;"><input style="width: 50px;" type="text"/></td> <td style="padding: 5px;">GPM</td> </tr> <tr> <td style="padding: 5px;"><input style="width: 50px;" type="text"/></td> <td style="padding: 5px;">US GAL</td> </tr> </table> </td> </tr> </tbody> </table>				Interceptor Selection		ParkUSA Model HFS-	<input style="width: 100px;" type="text"/>	Rated Capacity	<table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td style="padding: 5px;"><input style="width: 50px;" type="text"/></td> <td style="padding: 5px;">GPM</td> </tr> <tr> <td style="padding: 5px;"><input style="width: 50px;" type="text"/></td> <td style="padding: 5px;">US GAL</td> </tr> </table>	<input style="width: 50px;" type="text"/>	GPM	<input style="width: 50px;" type="text"/>	US GAL
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<input style="width: 50px;" type="text"/>	GPM														
<input style="width: 50px;" type="text"/>	US GAL														
	From Step #2 Min. Volume Min. Capacity <input style="width: 100px;" type="text"/> US GAL														

SOCMP Sizes Available

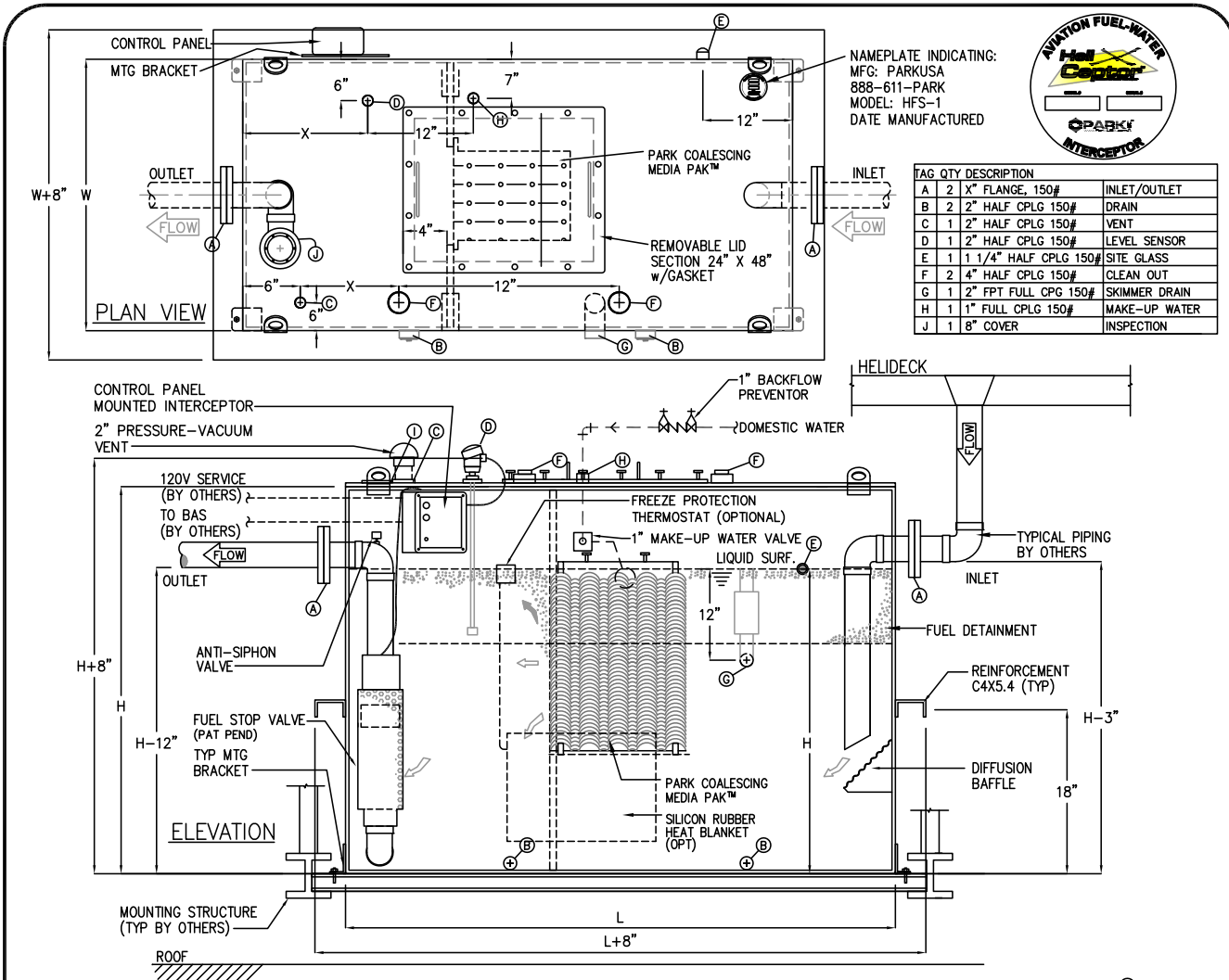
MODEL NUMBER	NOMINAL SIZE LENGTH X WIDTH X HEIGHT	MAXIMUM FLOW RATE (GPM)	FUEL SPILL CAPACITY (US GAL)	TOTAL VOLUME (US GAL)	INLET, OUTLET SIZE (IN)	EMPTY WEIGHT (LBS)	OPERATING WEIGHT (LBS)
HFS-100	3'-0" X 1'-6" X 4'-0"	60	30	100	4	600	4,500
HFS-200	4'-0" X 2'-0" X 4'-4"	90	60	200	4	900	6,600
HFS-300	4'-0" X 3'-0" X 4'-4"	135	90	300	4	1,200	8,100
HFS-400	5'-0" X 3'-0" X 4'-6"	180	120	400	6	1,400	9,600
HFS-500	5'-0" X 4'-0" X 4'-4"	225	150	500	6	1,600	10,600
HFS-600	6'-0" X 4'-0" X 4'-4"	300	180	600	6	1,800	11,400
HFS-700	6'-0" X 4'-0" X 5'-0"	400	210	700	6	2,000	14,000
HFS-800	8'-0" X 4'-0" X 4'-4"	500	240	800	6	2,200	13,100
HFS-900	8'-0" X 4'-0" X 4'-10"	600	270	900	8	2,400	15,200
HFS-1000	8'-0" X 4'-0" X 5'-0"	700	300	1,000	8	2,500	17,400
HFS-1200	8'-0" X 6'-0" X 5'-4"	800	360	1,200	8	2,800	19,400
HFS-1500	8'-0" X 6'-0" X 5'-4"	900	450	1,500	8	3,300	23,400
HFS-1800	10'-0 X 6'-0" X 5'-0"	1,000	540	1,800	8	3,700	25,300
HFS-2000	10'-0 X 6'-0" X 5'-6"	1,200	600	2,000	8	3,900	28,700

MAINTENANCE

The fuel-water separator should be inspected periodically for any accumulation of fuel and oils during normal operation. In the unfortunate event of fuel spill, the separator should immediately be serviced to remove hazardous material.

When necessary, the separator should be pumped out by a licensed pumping company familiar with regulations regarding proper disposal.





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Specifications

TANK SHALL BE DESIGNED TO WITHSTAND STATIC & DYNAMIC HYDRAULIC LOADINGS WHILE EMPTY & DURING OPERATION. TANK SHALL BE CONSTRUCTED OF 3/8" STAINLESS STEEL CONFORMING TO ASTM A240/A666 FOR TANKS, WEIRS, FLOW DISTRIBUTORS, AND ENERGY DISSIPATER DEVICE. ALL INTERNAL COMPONENTS SHALL CONSIST OF CORROSION RESISTANT MATERIALS. WELD IN ACCORDANCE WITH AWA D1.1 TO PROVIDE WATER-TIGHT TANK THAT WILL NOT WARP OR DEFORM EXCESSIVELY UNDER LOAD. MANWAY ACCESS COVERS SHALL BE BOLTED AND GASKETED. TANK EXTERIOR SHALL BE COATED 8 MILS FLEXCOAT EPOXY.

Engineering Data

A FABRICATED FUEL-WATER INTERCEPTOR IS RECOMMENDED FOR HELIPORT INSTALLATIONS TO MINIMIZE POTENTIAL FIRE HAZARDS IN THE EVENT OF A FUEL SPILL. THE SEPARATOR IS TO BE LOCATED SUCH THAT SPILLED FUEL IS CONTAINED PRIOR TO ENTERING THE STORM PIPING.

MODEL	NOMINAL SIZE LENGTH x WIDTH x HEIGHT	FLOW RATE GPM	SPILL CAP. - USGAL	TANK CAP. USGAL	INLET-OUTLET SIZE	EMPTY WEIGHT-LBS	GROSS WEIGHT-LBS
HFS-100	3'-0" x 1'-6" x 4'-0"	60	30	100	4" - 6"	600	1,442
HFS-200	4'-0" x 2'-0" x 4'-0"	90	60	200	4" - 6"	900	2,398
HFS-300	4'-0" x 3'-0" x 4'-0"	135	90	300	4" - 6"	1,200	3,446
HFS-400	5'-0" x 3'-0" x 4'-0"	180	120	400	6" - 8"	1,400	4,208
HFS-450	5'-0" x 3'-0" x 3'-9"	200	135	450	6" - 8"	1,500	4,196
HFS-500	6'-0" x 3'-0" x 4'-0"	225	150	500	6" - 8"	1,600	4,970
HFS-600	6'-0" x 4'-0" x 4'-0"	300	180	600	6" - 8"	1,800	6,293
HFS-700	6'-0" x 4'-0" x 5'-0"	400	210	700	6" - 8"	2,000	7,990
HFS-800	8'-0" x 4'-0" x 4'-0"	500	240	800	6" - 8"	2,200	8,190
HFS-900	8'-0" x 4'-0" x 5'-0"	600	270	900	8"	2,400	10,387
HFS-1000	8'-0" x 4'-0" x 5'-0"	700	300	1,000	8"	2,500	10,487
HFS-1200	8'-0" x 5'-0" x 5'-0"	800	360	1,200	8"	2,800	12,784
HFS-1500	8'-0" x 6'-0" x 5'-0"	900	450	1,500	8"	3,300	15,281
HFS-2000	10'-0" x 6'-0" x 5'-6"	1,200	600	2,000	8"	3,900	20,748



888.611.PARK
www.park-usa.com

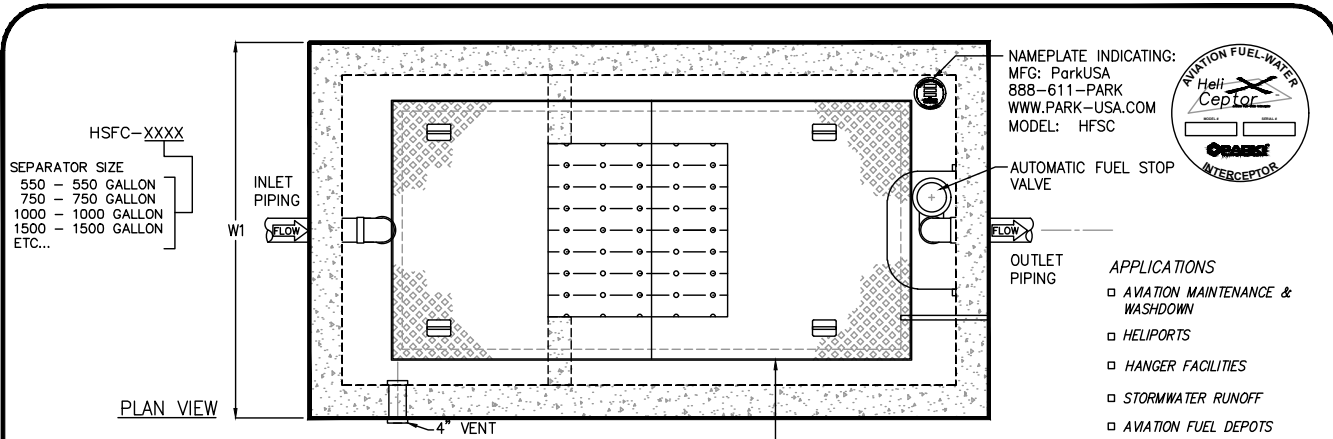
PARK USA
DESIGN FOR WATER



PROJECT: _____
 CUSTOMER: _____
 ENGINEER: _____
 ORDER #: _____ PROJ #: _____
 DATE: _____

FUEL-WATER SEPARATOR ASSEMBLY
 MODEL HFS - 100 THRU 2000 GALLONS

PM	DRN	ENG	DWG. NO.	REV.
			HFS-1	A
DATE 03/2021				

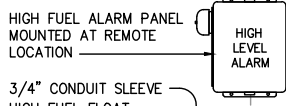


HSFC-XXXX
SEPARATOR SIZE
550 - 550 GALLON
750 - 750 GALLON
1000 - 1000 GALLON
1500 - 1500 GALLON
ETC...

- APPLICATIONS**
- AVIATION MAINTENANCE & WASHDOWN
 - HELIPORTS
 - HANGER FACILITIES
 - STORMWATER RUNOFF
 - AVIATION FUEL DEPOTS
 - REMEDIATION WATER CLEANUP

SAND-OIL INTERCEPTOR SCHEDULE									
MODEL NO.	MAX FLOW GPM	CAPACITY USGal	OIL CAP. US (GAL)	EMPTY WT (LBS)	LENGTH L1	WIDTH W1	HEIGHT H1	INLET FL1	OUTLET FL2
HSFC-500	225	500	150	9,000	7'-10"	4'-4"	4'-6"	3'-3"	3'-0"
HFSC-750	450	750	225	10,000	7'-10"	4'-4"	6'-0"	4'-5"	4'-2"
HFSC-1000	700	1,000	300	13,200	8'-8"	5'-0"	6'-0"	4'-9"	4'-6"
HFSC-1500	900	1,500	450	20,000	9'-2"	5'-8"	7'-0"	5'-9"	5'-6"
HFSC-2000	1,200	2,000	600	22,000	9'-0"	6'-0"	8'-0"	6'-9"	6'-6"
HFSC-2500	1,650	2,500	750	27,000	13'-0"	7'-0"	7'-0"	5'-9"	5'-6"

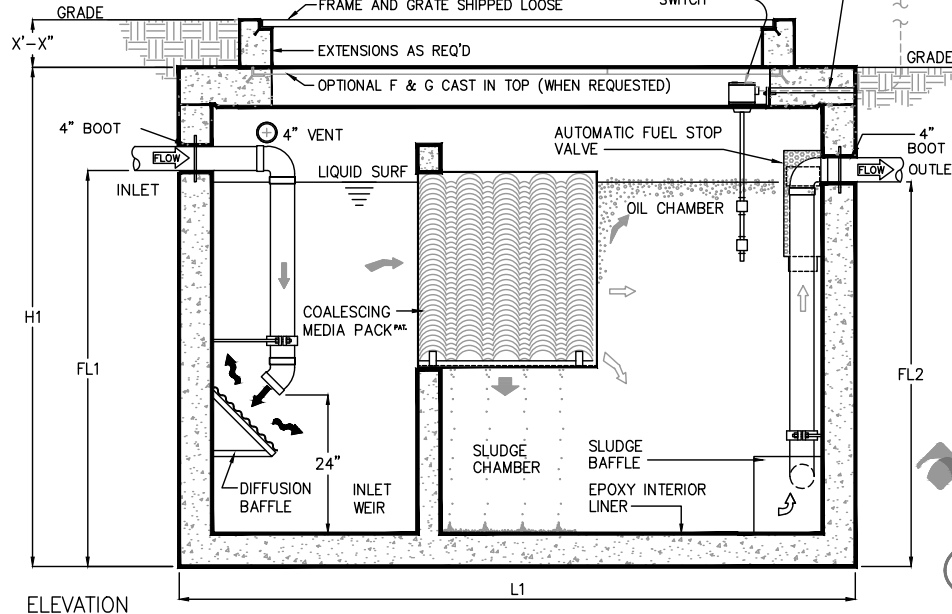
OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION



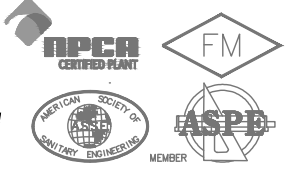
GUARANTEED PERFORMANCE
A certified performance analysis utilizing a proprietary computer program will accurately model systems to ensure that their effluent qualities meet the required discharge criteria (EPA and Local Codes)

Influent oily water contains oil droplets of many different sizes. These droplets rise at different rates. Park utilizes a statistical program that divides the droplets into ranges of sizes and calculates the rise rates of each range. This calculation determines which droplets the separator can capture.

Contact our Engineering Dept. @ 888-611-PARK for a free performance evaluation.



GUARANTEED PERFORMANCE FOR CODE MAXIMUM OIL CONCENTRATION (SANITARY SEWER 400 PPM, STORM SEWER 15 PPM) © Park 2016



Specifications

CONCRETE : Class II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.

REINFORCEMENT: Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal.

MATERIALS: Access frame & cover shall be fabricated with min. 1/4" thick nonskid floor plate, bolt-down, & lifting handles. All materials to be corrosion resistant.

Engineering Data

Interceptor is structurally and hydraulically engineered conforming to Uniform Plumbing Code. Nominal total liquid capacity and oil holding capacity as indicated. Manufacturer shall submit performance calculations for oil & water separation certified by a licensed professional engineer. Field excavation and preparation shall be completed prior to delivery of interceptor.

PROJECT : _____

CUSTOMER : _____

ARCHITECT : _____

ENGINEER : _____

ORDER # : _____

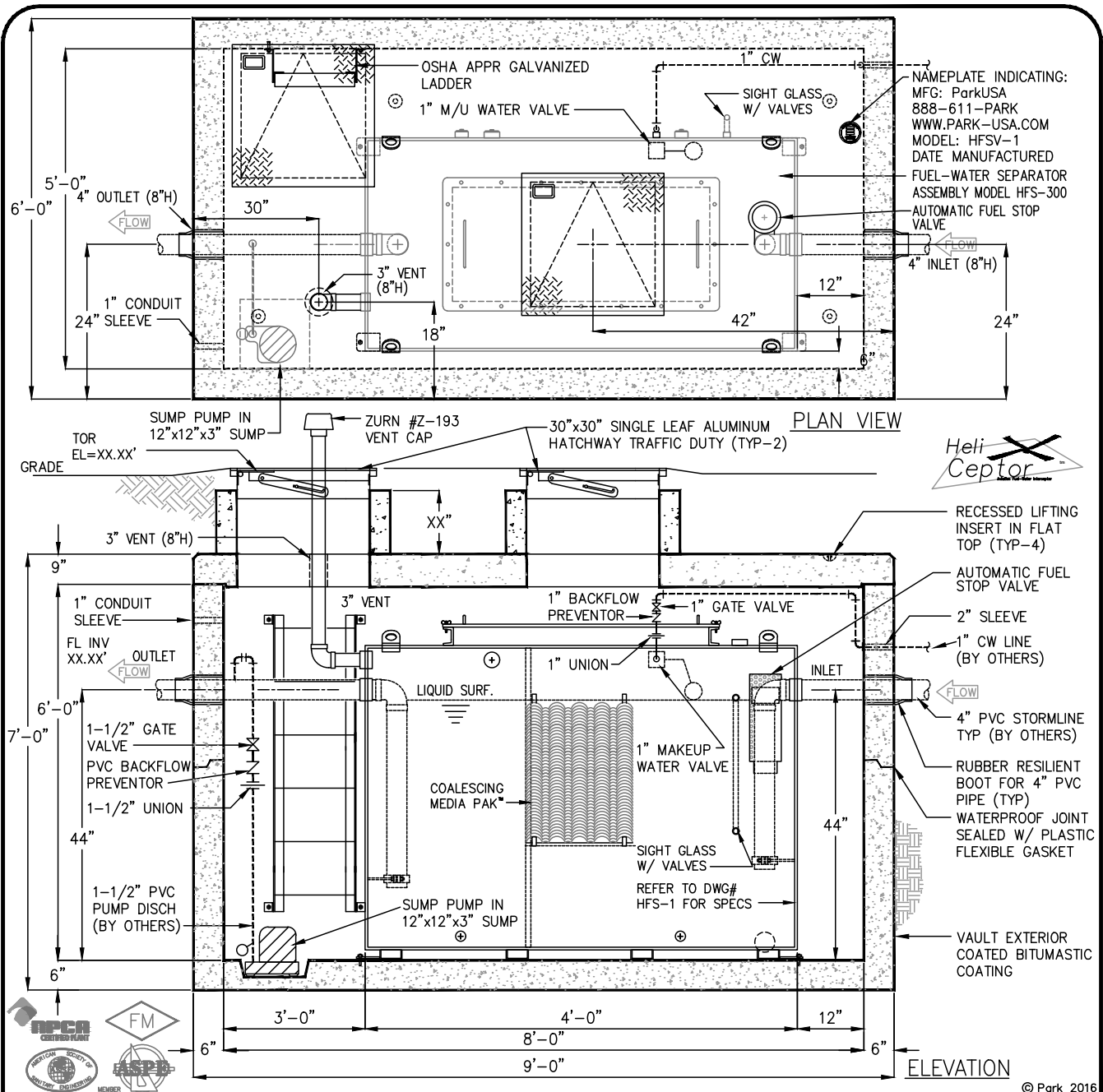
DATE : _____



**HELIPORT FUEL SEPARATOR
MODEL HFSC**

PM	DRN	ENG	DWG. NO.	REV.
DATE	05/16		HFSC-1	A

Wastewater Systems



Specifications

CONCRETE : Class II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth. Gross empty weight of approximately 33,600 pounds.

REINFORCEMENT: Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.

HATCHWAY : 1/4" aluminum skid-resistant floor plate welded to 1/4" extruded aluminum frame with stainless steel hinges, slam-lock, & locking staple.

Engineering Data

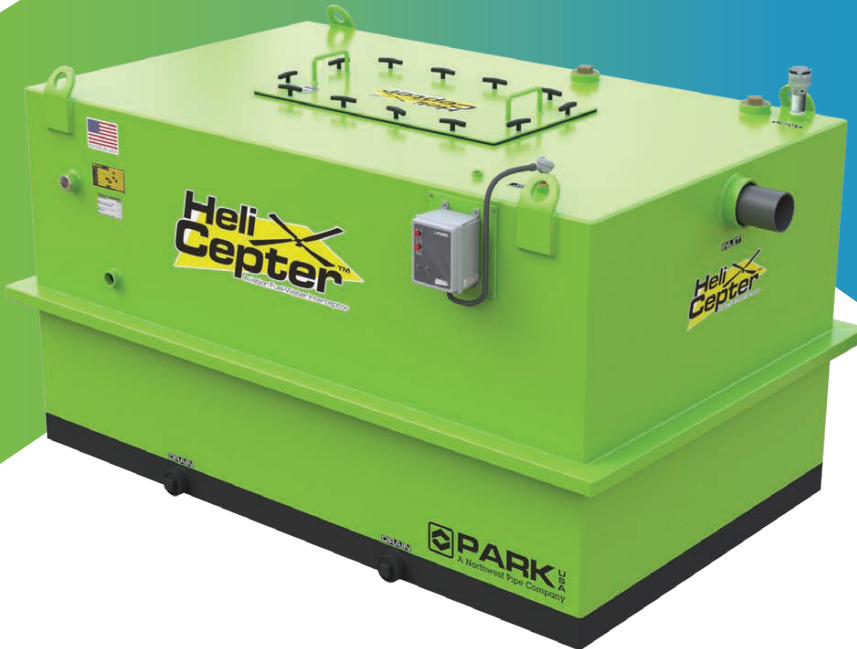
Field excavation and preparation shall be completed prior to delivery of assembly. Use dimensional data as shown.

PROJECT :
CUSTOMER :
ARCHITECT :
ENGINEER :
ORDER # :
DATE :

888.611.PARK
www.park-usa.com

**HELIPORT FUEL-WATER SEPARATOR VAULT
MODEL HFSV**

PM	ENG	DRN	DWG. NO.	REV.
			HFSV-01	A
DATE 05/16				



Features

- 15 year warranty
- Meets fire and building codes
- Patented design and certified performance
- Stainless steel construction
- Easy access cover with fall-protection
- Automatic service alarm system
- Easy to install and low maintenance

HeliPort Fuel-Water Separator

The ParkUSA® HeliCepter® is a fuel-water separator for use on heliports. In the event of a helicopter accident or fuel spillage, the separator will separate and retain flammable fuel from stormwater.

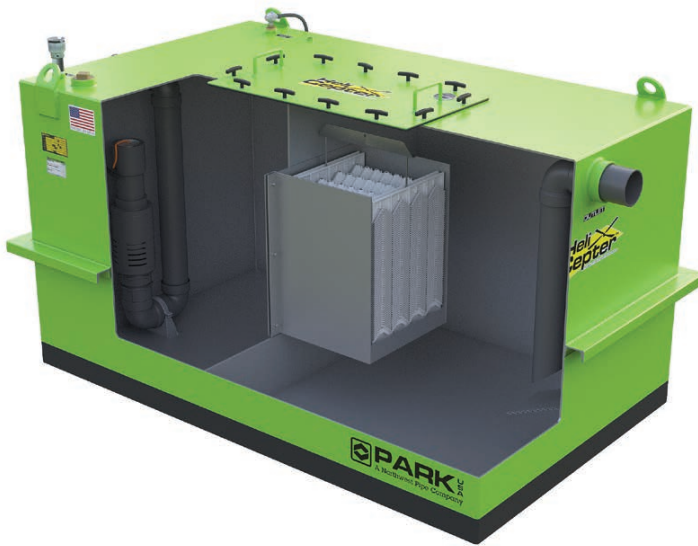
Special considerations should be made for heliports (also referred to as a helistop, helipad, or helideck) located on elevated structures or building rooftops. These applications have rooftop stormwater drainage systems that run down within the building or marine structure. Potential fire hazards exist from fuel entering into the drainage system from aircraft fueling or crash during landing and takeoff. Fire and plumbing codes prohibit fuel from entering into the plumbing drainage systems.

To maximize life-safety and property protection, a HeliCepter fuel-water separator is an essential part of every heliport.

OilStop Valve is protected by US Patent #9,963,358



WW HELICEPTER
Standard



System Components

The HeliCeptor fuel-water separators have the following components, making it superior to all other separators on the market:

- Patented coalescing media technology
- Patented fuel-stop valve
- Stainless steel construction
- Easy access cover with fall-protection
- Automatic service/alarm report system
- 15 year warranty

Options

- Elevated stands & ladders
- Dual wall construction
- Insulated tanks and electric heaters
- UL 2085 fuel storage tank
- Precast concrete vault enclosure

How it Works

As precipitation falls on a heliport landing pad, the resulting stormwater runoff drains away from the pad via a plumbing drainage system. The drainage system often drains through a building on its way to a stormwater or sanitary sewer.

In the event of a helicopter crash or accidental fuel spill, the runoff could contain dangerous components that put the building and public sewer at risk for fire and explosion.

The function of a fuel-water separator is to intercept fuel and oils from the heliport drainage system and then safely detain it for removal. Runoff flows from the landing pad into the drainage system and then to the HeliCeptor heliport separator.

The runoff enters the separator's inlet chamber where any present fuel slugs rise immediately to the surface. The remaining fuel-laden wastewater flows through the patented coalescing media where remaining hydrocarbon droplets and fine solids are progressively separated. All the separated hydrocarbons rise to the upper area of the separator and are securely detained. Downstream, the patented fuel-stop valve prevents the release of harmful fuels from exiting the separator. Hazardous fumes are vented from the separator and safely away from the building and the public sewer.

Maintenance is made easy by the automatic monitoring system that notifies the operator of hydrocarbon high levels. Once activated, the operator has the separator cleaned by a qualified service company. An auxiliary storage tank can be utilized to increase the storage capability of the separator system.

Visit heliceptor.parkusa.com for more information and design assistance.

To request a quote or catalog, visit request.parkusa.com.

APPLICATIONS



General Aviation



Medical Facilities



Offshore/ Marine



Commercial



Municipal



Municipal Airports

SLIDEGATE



PARK USA
A Northwest Pipe Company

ENGINEERING FACTS

GENERAL INFORMATION

Slide Gate Valve assemblies help control the desired water level elevations in rivers, canals, wastewater treatment plants and recreational lakes and are found in engineering specifications for airports, fire departments, bus barns, city maintenance departments, agriculture facilities, chemical storage areas, fish hatcheries and equipment auction yards.

The ParkUSA Slide Gate Valve Assembly can be used in numerous applications on projects requiring Sluice and Slide gates, Channel Gates, Weir Gates, Flap Gates or Stop Logs. Applications include municipal waterworks and treatment facilities. Other applications include Irrigation Canals, Fish Hatcheries and Water Reservoirs.

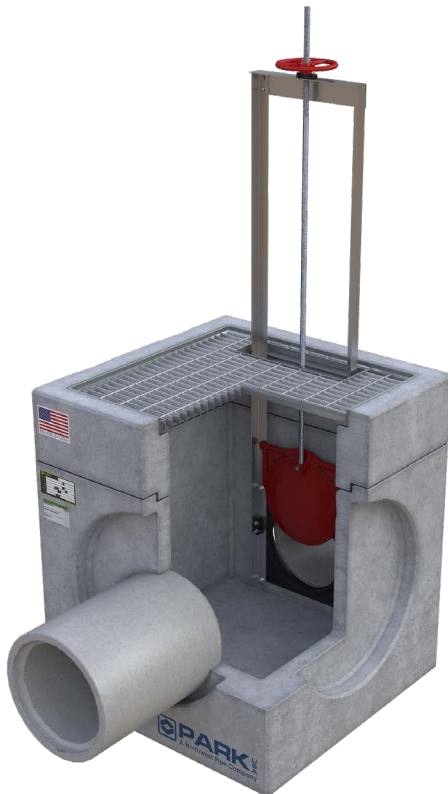
SYSTEM COMPONENTS

The Slide Gate consists of a precast concrete basin, galvanized steel frame and bar grating, valves, and inlet/outlet pipe ranging from 8 inches to 48 inches, designed for reinforced concrete, corrugated metal, high density polyethylene, or PVC pipe materials.

ParkUSA can provide Slide gate, flap gate, or sluice gate valves constructed of cast iron, galvanized steel, stainless steel, or aluminum.

Applications:

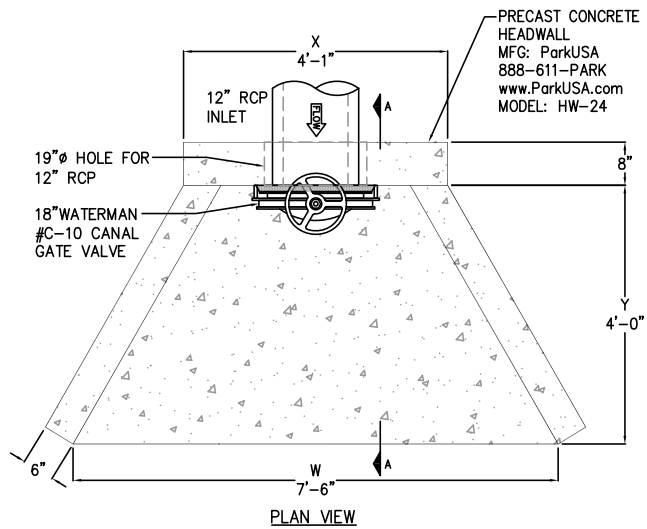
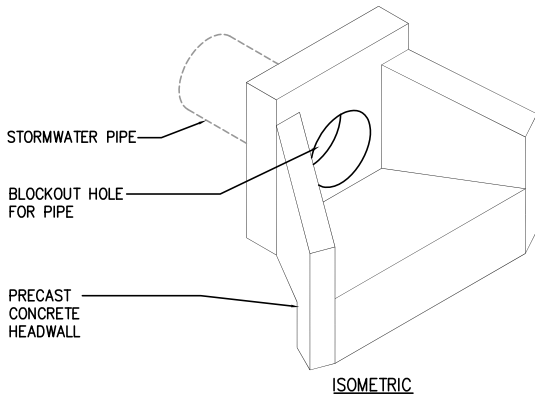
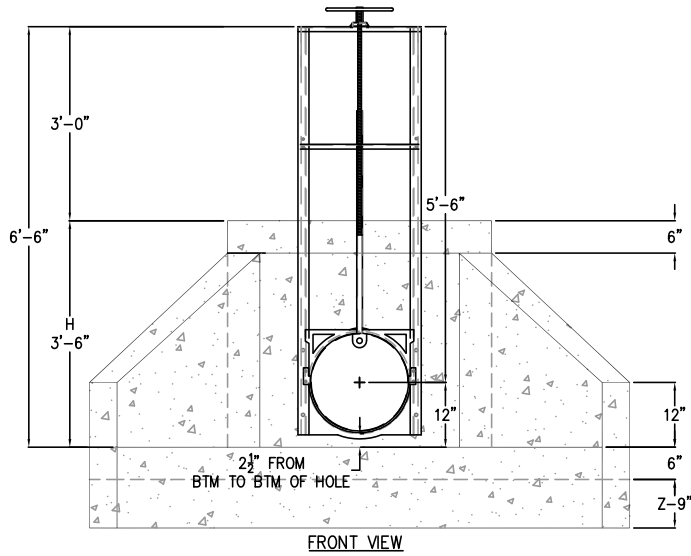
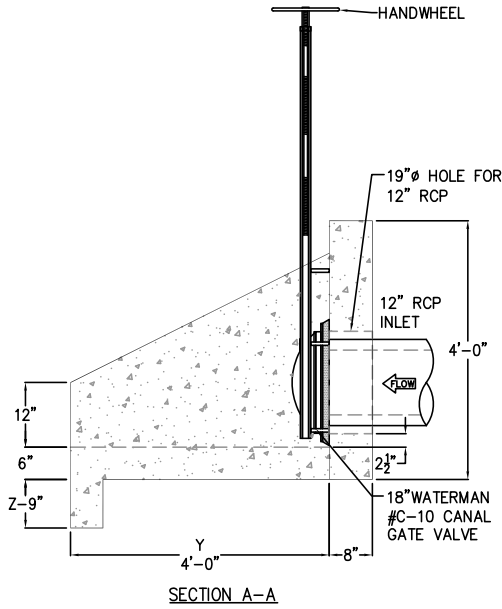
- Municipal Waterworks
- Treatment Facilities
- Irrigation Canals
- Fish Hatcheries
- Water Reservoirs



Flow measuring techniques will vary depending on the application flow type.

FEATURES

- High-Strength Precast Basin
- Heavy-Duty Aluminum Frames
- Galvanized Steel Bar Grating
- Heavy-Duty Cast-Iron Cover and Frame Ring



PRECAST CONCRETE HEADWALL
MFG: ParkUSA
888-611-PARK
www.ParkUSA.com
MODEL: HW-24

MODEL	PIPE DIA	DIMENSIONS					WEIGHT (LBS)
		H	W	X	Y	Z	
HW-12-18	12"	3'-6"	7'-6"	4'-1"	4'-0"	9"	6,200

© Park 2017

PROJECT:
CUSTOMER:
ENGINEER:
ORDER #:
PROJ #:
DATE:



SPECIFICATIONS

CONCRETE: Class I/II concrete with of design strength of 4500 PSI at 28 days. Unit is of monolithic construction including walls and floor.

REINFORCEMENT: Grade 60 reinforced. No. 4 steel rebar to conform to ASTM A615 on required centers or equal.



**HEADWALL FOR STORMWATER PIPING
MODEL HW - 12"**

PM JRA	DRN CH	ENG DJ	DWG. NO. SGHW-12-18	REV. A
DATE 09/17				

FLUME METERING



PARK USA
A Northwest Pipe Company

ENGINEERING FACTS

GENERAL INFORMATION

Flow measuring techniques will vary depending on the application flow type. There are two basic types of flow systems; closed channel, and open channel. A Closed Channel can be described as water flow through a completely filled pressurized pipe. Flow measurement is typically performed by inserting a mechanical meter, venture meter, magnetic meter within the pipe. A typical example of a closed channel flow is a city potable water line that is metered with a turbine meter.

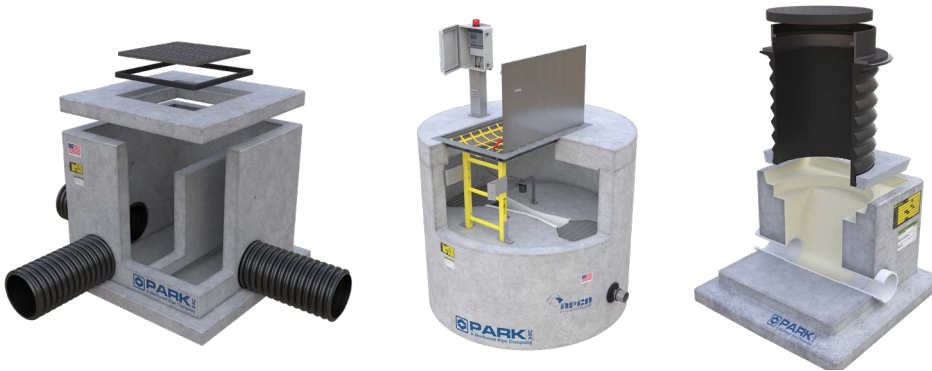
The second type of flow type, Open Channel, is best described as, water that flows with a “free surface” typically in a non-pressurized (atmospheric) pipe or channel. Examples are rivers, irrigation/drainage ditches, canals, and for sanitary sewer. The most practical method for Open channel flow measurement is accomplished by the use of a hydraulic structure; flumes and weirs. These hydraulic structures enable flow calculation by measuring the water depth at a single point. And by using the structure’s associated equation or table, the flow rate can be calculated.

Open channels are used to conduct liquids in most sewer systems, sewage treatment plants, industrial waste applications, and irrigation systems.

There are three methods for automatically measuring open channel flow:

- Hydraulic Structures
- Area Velocity
- Slope-Hydraulic Radius

MODELS



Weirs

Flumes

Sample well

MODELS

Weirs

The most common method of measuring open channel flow is the hydraulic structures method. A calibrated restriction inserted into the channel controls the shape and velocity of the flow. The flow rate is then determined by measuring the liquid level in or near the restriction.

The restricting structures are called primary measuring devices. They may be divided into two broad categories—weirs and flumes.

A weir is an obstruction or dam built across an open channel over which the liquid flows, often through a specially shaped opening. Weirs are classified according to the shape of this opening. The most common types of weirs are the triangular (or V-notch) weir, the rectangular weir, and the trapezoidal (or Cipolletti) weir. The flow rate over a weir is determined by measuring the liquid depth in the pool upstream from the weir.

Weirs can be simple and inexpensive to build and install. Common materials of construction include metal, fiberglass and wood. However, they represent a

Flow measurement is typically performed by inserting a mechanical meter, venture meter, magnetic meter within the pipe. A typical example of a closed channel flow is a city potable water line that is metered with a turbine meter.

FEATURES

- High-Strength Precast Basin
- Heavy-Duty Aluminum Frames
- Galvanized Steel Bar Grating
- Heavy-Duty Cast-Iron Cover and Frame Ring

significant loss of head, and are not suitable for measuring flows with solids that may cling to the weir or accumulate upstream from it.

Automatic measurement of the flow rate in an open channel flume or weir can be performed manually by reading a single level measurement and calculating, or by the means of an automatic flow meter. The most common open channel meters are the Ultrasonic, Bubbler, & Pressure Transducer. The Ultrasonic Meter measures the time required for an acoustic pulse to travel from a transmitter to the liquid surface (where it is reflected) and returned to a receiver.

The Bubbler Meter consists of a bubbler tube that is anchored in the flow stream at a fixed depth, then the tube supplies a constant bubble rate of pressurized air. The air pressure required to maintain the bubble rate is measured; this pressure is proportional to the liquid level.

The Pressure Transducer consists of a sealed pressure transducer submerged in the flow stream at a fixed depth. The pressure measured by the transducer is proportional to the liquid level.

Flumes

A flume is a specially shaped open channel structure that temporarily modifies the flow through the channel to enable the measurement of the flow rate. Specifically, the flume restricts the channel area and/or changes the channel slope, resulting in an increased velocity and a change in the level of the liquid flowing through the flume structure. The flow rate through the flume can be determined by measuring the liquid depth at a specified point in the flume, and using the flume's associated equation (head-flow rate relationship).

There are several popular flume types; Parshall, Palmer-Bowlus, and Manhole Flume. The most common flume is the Parshall Flume. The flow rate through a Parshall flume is determined by measuring the liquid level one third of the way into the converging section. Parshall flumes are designated by the width of the throat, which ranges from 1 inch to 50 feet. The throat width and all other dimensions must be strictly followed so that standard discharge tables can be used. Also, note the drop in the floor of the flume, which makes it difficult to install a Parshall flume in an existing channel.

Another popular flume is the Palmer-Bowlus Flume. This flume is designed to be installed in an existing channel with minimal effort. The flow rate through a Palmer-Bowlus flume is determined by measuring the liquid depth at a point one-half pipe diameter upstream from the flume throat. Palmer-Bowlus flumes are designated by the size of the pipe into which they fit. Standard sizes range from 4 to 42 inches. The dimensional configuration is not rigidly established for each flume size. However, a Palmer-Bowlus flume with a trapezoidal throat with a flat bottom has emerged as the standard design for circular pipes.

The Manhole Flume is a unique variation of the Parshall Flume. An advantage of the Manhole Flume is that it designed for easy installation in standard manholes and existing pipe sewer lines.

Flumes can be more expensive than weirs. However, flumes result in a lower head loss and are self-cleaning, requiring less maintenance than a weir.

Area Velocity

The Area Velocity method is an open channel water measurement design that does not require the installation of a weir or flume. Instead, it can be used directly in a new or existing pipe channel. The area velocity method calculates flow rate by multiplying the area of the flow by its average velocity. This is often referred to as the continuity equation,

$$Q=A \times V$$

For convenience, most area velocity flow meters use a single sensor to measure flow rate. Doppler ultrasonic characteristics is used to measure average flow velocity, while an integral pressure transducer measures the level in the channel. The flow meter converts this level into the area of the flow based on the size and shape of the channel.

The main advantage of the area velocity method is that it can be used to measure flow under a wide range of conditions.

- Open Channel
- Surcharged
- Full Pipe
- Submerged
- Reverse Flow

Slope-Hydraulic Radius

Various resistance equations are used to estimate flow rate based on measurements of the water surface slope, cross-sectional area, and wetted perimeter over a length of uniform channel. The most popular of these equations is the Manning formula:

$$Q=K_n/n R^{\frac{2}{3}} S^{\frac{1}{2}} A$$

where:

- Q = flow rate
- A = cross sectional area of flow
- R = hydraulic radius (cross sectional area divided by wetted perimeter)
- S = slope of the hydraulic gradient
- n = roughness coefficient based on channel material and condition
- K = constant dependent upon units

The cross-sectional area A and the hydraulic radius R are calculated based on the liquid depth, and the size and shape of the channel. The slope S is often estimated based on installation drawings of the channel. The roughness coefficient n is selected from standard references based on the material of construction of the channel, and its condition.

Given the size, shape, slope and roughness of the channel, an open channel flow meter can calculate flow rate using the Manning formula based on a measurement of the liquid depth. The Manning formula is not as accurate as the hydraulic structures and area velocity methods, but it can provide sufficient accuracy in some applications. In addition, no weir or flume is required.

Sample Wells

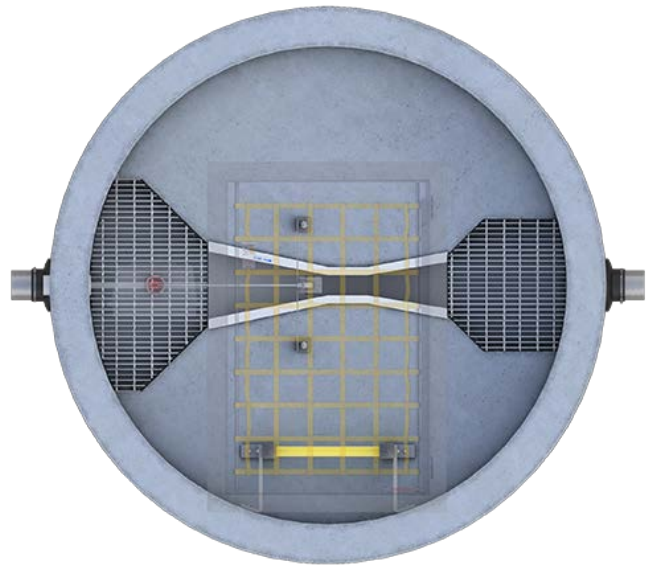
ParkUSA sample wells are available in two construction materials:

Concrete: pre-cast class 1 concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.

HDPE: high density polyethylene construction. Low maintenance, easy installation and acidic resistance conforms the main features of this sample well model.

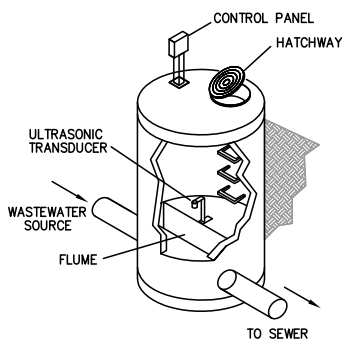
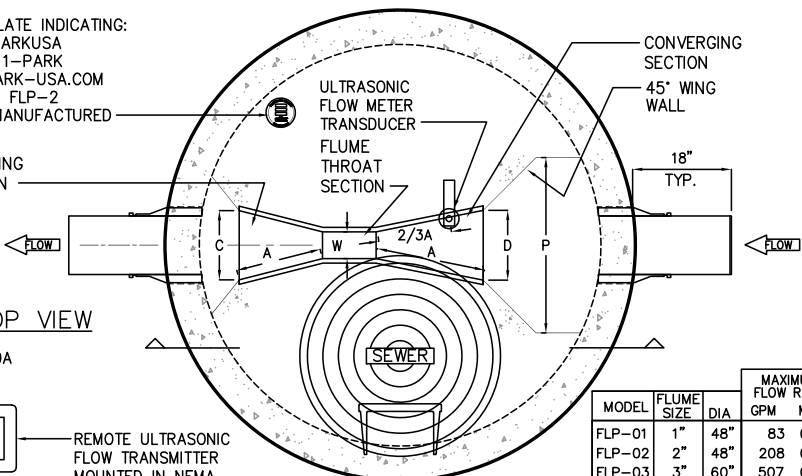
Furthermore, specific design consideration is to be followed in a sample well construction, they state that:

- Sample well must be installed under a separate plumbing permit.
- Use 15-inch T&G RCP for installation, 6 feet deep and less.
- Use 24-inch T&G RCP for installation greater than 6 feet deep.
- Sampling well must be set in a circular or square concrete pad (one foot greater than outside diameter of pipe).
- Inside installation not permitted where outside installation is possible.
- Installation inside building must be poured in place, no concrete pipe is permitted.
- Lawn installation must be 4 inches above finished grade.
- Drive and sidewalk installation must be brought to finished grade.
- To be installed on private property, in an accessible location to city personnel.



NAMEPLATE INDICATING:
MFG: PARKUSA
888-611-PARK
WWW.PARK-USA.COM
MODEL: FLP-2
DATE MANUFACTURED

DIVERGING SECTION



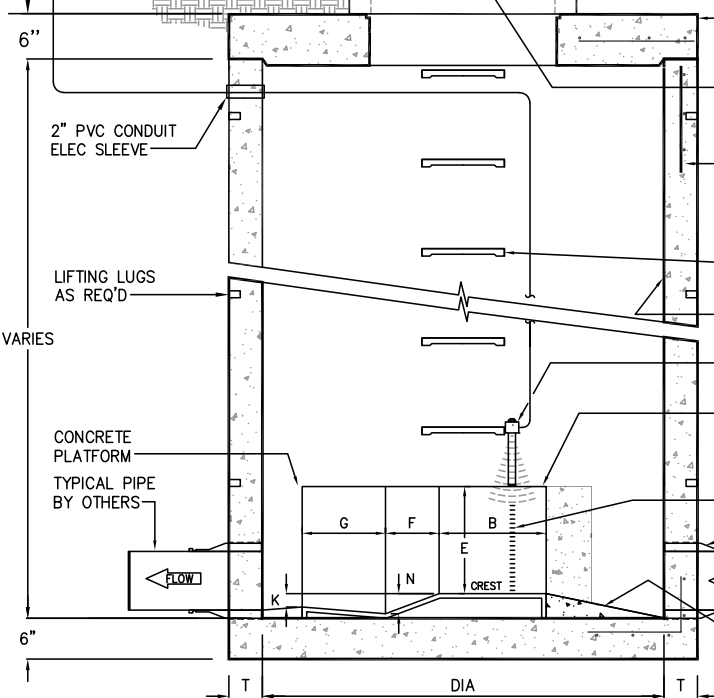
120V/20A

REMOTE ULTRASONIC FLOW TRANSMITTER MOUNTED IN NEMA 4X ENCLOSURE.

MODEL	FLUME SIZE	DIA	MAXIMUM FLOW RATE		PARSHALL FLUME DIMENSIONS (in)											
			GPM	MGD	W	A	B	C	D	E	F	G	K	N	P	T
FLP-01	1"	48"	83	0.12	1	14- ¹ / ₄	14	3- ³ / ₁₆	6- ¹ / ₄	20	3	8	3	1- ¹ / ₈	20	5
FLP-02	2"	48"	208	0.30	2	16- ³ / ₁₆	16	5- ⁵ / ₁₆	8- ⁷ / ₁₆	14	4- ¹ / ₂	10	7	1- ¹ / ₈	28	5
FLP-03	3"	60"	507	0.73	3	18- ³ / ₁₆	18	7	10- ³ / ₁₆	24	6	12	1	2- ¹ / ₄	30	6
FLP-06	6"	96"	1,736	2.50	6	24- ⁷ / ₁₆	24	15- ¹ / ₂	15- ¹ / ₂	24	12	24	3	4- ¹ / ₂	36	6
FLP-09	9"	96"	4,027	5.80	9	34- ³ / ₁₆	34	15	22- ³ / ₁₆	30	12	18	3	4- ¹ / ₂	42	6
FLP-12	12"	144"	7,226	10.41	12	54-0	53	24	33-0	36	24	36	3	9-0	42	8
FLP-18	18"	144"	11,041	15.90	18	57-0	56	30	40- ³ / ₈	36	24	36	3	9-0	46	8

GRADE EL. = XX.XX'

TOC EL = XX.XX'



- PRECAST CONCRETE SLAB TOP SEALED W/ PLASTIC FLEXIBLE GASKET MATERIAL
- 24" DIA DUCTILE IRON HINGED ACCESS COVER MARKED "WASTEWATER FLUME ASSEMBLY"
- #5 REBAR @ 11" O.C.E.W. (1) MAT FOR TOP SLAB BAR BENDING & PLACEMENT SHALL COMPLY W/ LATEST ACI STANDARDS
- OSHA APPROVED STEPS AT 16" O.C.
- INTERIOR LINED W/ CORROSION PROTECTION LINER
- ULTRASONIC FLOW METER TRANSDUCER w/ SS MTG BRACKET
- PARSHALL MANHOLE FLUME CONSTRUCTED OF CORROSION RESISTANT MATERIALS, WITH STAFF GAUGE
- STAFF GAUGE
- RESILIENT PIPE CONNECTION (PRESS-SEAL) TYP-2
- INV EL= XX.XX'
- SLOPE 1/4

CONTRACTOR TO FIELD VERIFY ALL ELEVATIONS.



© Park 2016

Specifications

CONCRETE : Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor, first stage of wall and baffle with sectional riser to required depth.

REINFORCEMENT: Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal. Structural design is based on AASHTO HS-20 loading.

ACCESS COVER : The access cover be minimum 24" diameter and be constructed of ductile iron. The cover shall be lockable and be hinged with a safety blocking system. The cover shall be H20 traffic duty and have nameplate indicating "Wastewater Flume Assembly".

Engineering Data

Manhole Station is structurally and hydraulically engineered conforming to Uniform Plumbing Code and ASTM C-478.

Field excavation and preparation shall be completed prior to delivery of the septic tank. Use dimensional data as shown.

PROJECT: _____

CUSTOMER: _____

ENGINEER: _____

ORDER # : _____

PROJ # : _____

DATE: _____



WASTEWATER MONITORING MANHOLE - PARSHALL
MODEL FLP

PM	DRN	DWG. NO.	REV.
DATE	CH	FLP-2	A
01/14			

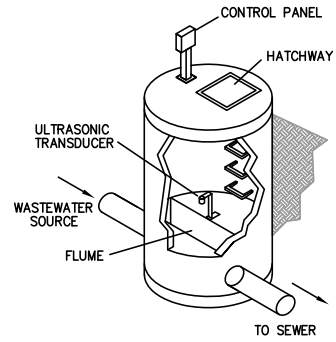
NAMEPLATE INDICATING:
MFG: PARKUSA
MODEL: FLP
DATE MANUFACTURED

DIVERGING SECTION

ULTRASONIC FLOW METER TRANSDUCER
FLUME THROAT SECTION

CONVERGING SECTION
45° WING WALL

18" TYP.



REMOTE ULTRASONIC FLOW TRANSMITTER MOUNTED IN NEMA 4X ENCLOSURE.

ALUM MOUNTING PEDESTAL

TOP VIEW

MODEL	FLUME SIZE	DIA	MAXIMUM FLOW RATE		PARSHALL FLUME DIMENSIONS (in)												
			GPM	MGD	W	A	B	C	D	E	F	G	K	N	P	Q	
FLP-01	1"	48"	82	0.117	1 14- ¹ / ₁₆	14	3-p	6- ¹ / ₁₆	9	3	8	¹ / ₈	1- ¹ / ₁₆	20	12		
FLP-02	2"	48"	163	0.235	2 16- ³ / ₁₆	16	5- ³ / ₁₆	8- ¹ / ₁₆	9	4- ¹ / ₂	10	¹ / ₂	1- ¹ / ₁₆	28	18		
FLP-03	3"	72"	835	1.200	3 18- ³ / ₁₆	18	7	10- ³ / ₁₆	24	6	12	1	2- ¹ / ₁₆	30	18		
FLP-06	6"	84"	1755	2.530	6 24- ¹ / ₁₆	24	15- ¹ / ₂	15- ³ / ₁₆	24	12	24	3	4- ¹ / ₂	36	24		
FLP-09	9"	96"	3981	5.730	9 34- ³ / ₁₆	34	15	22- ³ / ₁₆	30	12	18	3	4- ¹ / ₂	42	24		

TOC EL = XX.XX'

6" GRADE EL. = XX.XX'

120V/20A

LIFTING LUGS AS REQ'D

VARIES

CONCRETE PLATFORM
TYPICAL PIPE BY OTHERS

6"

6"

DIA

- PRECAST CONCRETE SLAB TOP SEALED W/ PLASTIC FLEXIBLE GASKET MATERIAL
- 36"x36" ALUMINUM HATCHWAY 150 PSF w/ TORSION BAR, LOCKING POST & SLAM-LOK
- #5 REBAR @ 11" O.C.E.W. (1) MAT FOR TOP SLAB BAR BENDING & PLACEMENT SHALL COMPLY W/ LATEST ACI STANDARDS
- INTERIOR LINED w/ CORROSION PROTECTION LINER
- OSHA APPROVED STEPS AT 16" O.C.
- ULTRASONIC FLOW METER TRANSDUCER w/ SS MTG BRACKET
- PARSHALL MANHOLE FLUME CONSTRUCTED OF CORROSION RESISTANT MATERIALS, WITH STAFF GAUGE
- STAFF GAUGE
- RESILIENT PIPE CONNECTION (PRESS-SEAL) TYP-2
- IN V EL = XX.XX'
- SLOPE 1/4
- CONTRACTOR TO FIELD VERIFY ALL ELEVATIONS.

ELEVATION

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Specifications

- CONCRETE :** Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first 7 feet of riser. Flat concrete top is 6" thick.
- REINFORCEMENT:** Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal.
- HATCHWAY:** 1/4" aluminum skid resistant diamond plate, with 1/4" extruded aluminum frame. Hatch to be furnished with 316 SS snap lock & hinges.

Engineering Data

Field excavation and preparation shall be completed prior to delivery of assembly. Use dimensional data as shown.

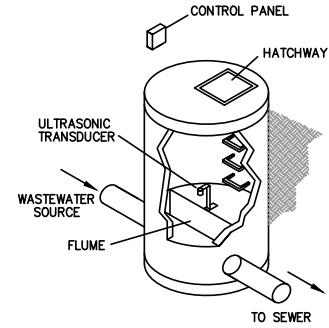
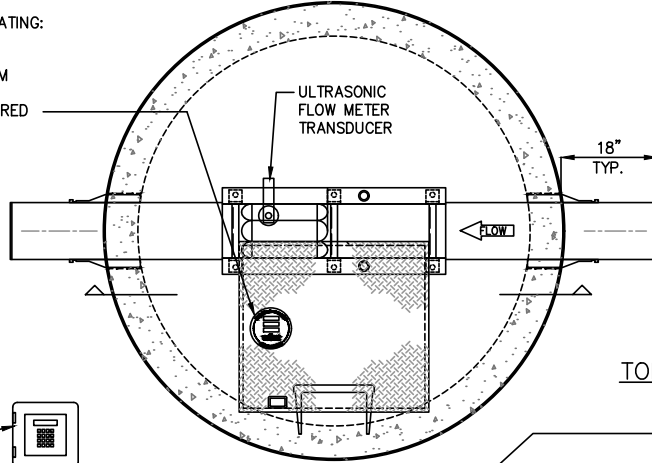
PROJECT: _____
 CUSTOMER: _____
 ENGINEER: _____
 ORDER #: _____
 PROJ #: _____
 DATE: _____



**WASTEWATER MONITORING MANHOLE
MODEL FLP - PARSHALL FLUME**

PM	DRN	DWG. NO.	REV.
	CH		
DATE	01/14	FLP-1	A

NAMEPLATE INDICATING:
MFG: PARKUSA
888-611-PARK
WWW.PARKUSA.COM
MODEL: FLPB
DATE MANUFACTURED



TOP VIEW

REMOTE ULTRASONIC
FLOW TRANSMITTER
MOUNTED IN NEMA
4X ENCLOSURE.



120V/20A
TOC EL= XX.XX'

6" GRADE EL= XX.XX'

LIFTING LUGS
AS REQ'D

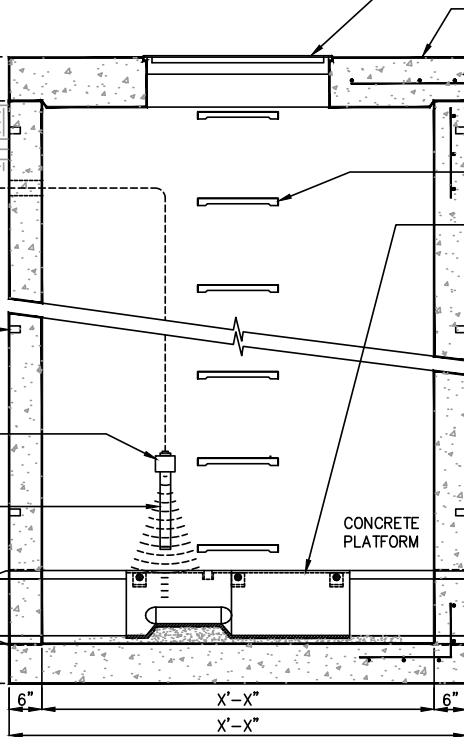
ULTRASONIC
FLOW METER
TRANSDUCER

SS TRANSDUCER
MTG BRACKET

VARIES

6"

6"



ELEVATION

36"x36" ALUMINUM HATCHWAY 300 PSF
w/ TORSION BAR, LOCKING POST
& SLAM-LOK

PRECAST CONCRETE SLAB
TOP SEALED W/ PLASTIC
FLEXIBLE GASKET MATERIAL

#5 REBAR @ 10" O.C.E.W.
(1) MAT FOR TOP SLAB
BAR BENDING & PLACEMENT
SHALL COMPLY W/ LATEST
ACI STANDARDS

OSHA APPROVED STEPS AT
12" O.C.

XX" PALMER BOWLUS FLUME
CONSTRUCTED OF CORROSION
RESISTANT MATERIALS, WITH
STAFF GAUGE

MODEL	PIPE SIZE	WET WELL SIZE	MAXIMUM FLOW RATE		
			CFS	MGD	GPM
FLPB-4	4"	60" DIA	0.12	0.07	54
FLPB-6	6"	60" DIA	0.30	0.19	132
FLPB-8	8"	60" DIA	0.69	0.45	310
FLPB-10	10"	60" DIA	1.12	0.72	502
FLPB-12	12"	60" DIA	1.67	1.08	752
FLPB-15	15"	72" DIA	3.09	1.99	1,385
FLPB-18	18"	84" DIA	4.61	2.98	2,071
FLPB-21	21"	96" DIA	7.04	4.55	3,161
FLPB-24	24"	120" DIA	9.47	6.10	4,248
FLPB-27	27"	120" DIA	13.09	8.44	5,873

CONTRACTOR TO FIELD VERIFY
INV EL= XX.XX' ALL ELEVATIONS.

X" 40 SCH PVC INLET
PIPE STUBOUT (TYP)

RESILIENT PIPE CONNECTION
(PRESS-SEAL) TYP-2

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FLPB-1-NO PEDESTAL

SPECIFICATIONS

CONCRETE : CLASS I/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR, FIRST STAGE OF WALL AND BAFFLE WITH SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL. STRUCTURAL DESIGN IS BASED ON AASHTO HS-20 LOADING.

HATCHWAY: 1/4" ALUMINUM SKID RESISTANT DIAMOND PLATE, WITH 1/4" EXTRUDED ALUMINUM FRAME. HATCH TO BE FURNISHED WITH 316 SS SNAP LOCK & HINGES. THE COVER SHALL HAVE A NAMEPLATE INDICATING "WASTEWATER FLUME ASSEMBLY".

ENGINEERING DATA

FIELD EXCAVATION AND PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF ASSEMBLY, USE DIMENSIONAL DATA AS SHOWN. ALL PIPE, VALVES AND FITTINGS OF THE ASSEMBLY ARE APPROVED BY ONE OF THE FOLLOWING ASSOCIATIONS.



A	.	.	ORIGINAL DRAWING
REV	DATE	BY	DESCRIPTION
PROJECT: .			
CUSTOMER: .			
ENGINEER: .			
ORDER #: .		PROJ #: .	
DATE: .		LOCATION: .	
www.parkusa.com 888-611-PARK			
WASTEWATER MONITORING MANHOLE MODEL FLPB-1 PALMER BOWLUS FLUME			
PM	PC	DRN	ENG
DATE	01/20		FLPB-1
DWG. NO.			REV.
A			A

LABTANK[®]

Acid Neutralization System



PARK
USA
A Northwest Pipe Company

ENGINEERING FACTS

GENERAL INFORMATION

When plumbing drainage systems contain the discharge of corrosive, toxic and flammable wastes, special attention should be placed in treating the waste. Untreated waste can physically damage a building's plumbing system as well as the environment. Hospitals, laboratories and industrial plants with this type of wastewater are common applications that require the treatment.

The ParkUSA LabTank® Neutralization Tank is designed so that acidic waste is collected and passed through the tank prior to discharging into the sanitary sewer system. The waste is chemically neutralized within the unit. It is important to note that the tank is an acid neutralizer. For optimal tank performance it is not recommended that acidic waste be further diluted prior to neutralization. Therefore, all acidic effluent should be gathered separately from other non-acidic waste and non-acidic waste should bypass the neutralization tank."

The ANT model presents a concrete shell with a high-density polyethylene (HDPE) interior and/or exterior liner, this is ParkUSA's standard model and it provides high neutralization efficiencies for mid-level acidic waters.

The Park LabTank Model ANT Acid Neutralization System is the most economical solution for a direct-bury, inline wastewater neutralizer. The ANT tank is single compartment composite tank system having a high strength precast concrete non-porous shell and an interior acid-resistant liner. Several types of liners are available to fit your exact wastewater service needs.

LABTANK MODELS



ANTC



ANMS



ANPT



ATMS

Apart from the ANT, the Acid Neutralization System includes the following models:

Model ANTC: Steel unit, ceramic liner available.

Model ANMS: Concrete unit, system integrates a monitoring system.

Model ANPT: Concrete containment, interior polyethylene tank.

Model ATMS: Concrete containment, interior polyethylene tank, and monitoring system attached.

When plumbing drainage systems that contain the discharge of corrosive, toxic and flammable wastes, special attention should be placed in treating the flow. Such untreated waste can physically damage buildings plumbing system as well as the environment. Laboratories and industrial plants are common applications that require the treatment of this type of waste.

FEATURES

- Sizes from 15 gallons to 5,000 gallons
- EPA & Code Compliant
- Choices of interior protective liners
- pH, Temperature, & Leak Detection Monitoring
- Prepacked system for easy installation
- High-strength precast concrete, steel, or fiberglass construction"

SYSTEM COMPONENTS

The ParkUSA ANT is available with the following components:

Concrete Box: base structure containing the acid neutralization rocks "Labrox". This box can also be made of steel depending on model and application.

Labrox: Medium that can be either a lump limestone or marble 1 to 3 inches in size with a high calcium carbonate equivalent content in excess of 95 percent. For a waste containing predominantly sulfuric acid, a dolomitic limestone is preferred, Dolomitic limestone contains a high percentage of magnesium carbonate in addition to the calcium carbonate. A smaller size fill should not be used as it tends to solidify and prevent passage of liquid. A full charge of neutralizing fill is to fill the invert of the tank inlet.

Liners: Liners are available for each model, including; exterior/interior high density polyethylene (HDPE) for model ANT, and ceramic brick for model ANTC.

High Density Polyethylene (HDPE): HDPE is a high quality abrasive and chemical resistant thermoplastic with high stress crack and impact resistance. HDPE has high structural rigidity and moderately high continuous operating temperature rating, up to 160 degrees Fahrenheit. The lining system is manufactured from 3/8-inch thick thermoplastic sheets with anchor studs for embedding into the concrete outer shell. The welded panels form an interior or exterior lining which becomes an integral part of the concrete structure.

Ceramic Brick Lining: The ceramic brick liner is the solution when fiberglass or plastic liners do not offer adequate protection. The ceramic brick liner offers permanent protection even in the harshest of chemical environments. This type of liner has traditionally been used in industrial applications such as Pulp & Paper Mills and Oil/Gas Refineries. The ceramic liner system consists of an impermeable membrane overlaid with acid proof brick. The liner can be applied to steel or concrete tanks.

OPERATION

The Acid Neutralization Tank Model ANT is the standard model available. Operation occurs following chemical processes. Acids and alkalis can be neutralized, rendering them harmless. The degree of neutralization can be measured by the pH system (concentration of hydrogen ion). Acid pH values range from 0 to 6.99, a neutral solution is seven and alkalis range from 7.01 to 14. The smaller the pH value, the higher the content of acidic waste. The larger the pH value the higher the content of alkaline waste. The neutralization process occurs by the chemical reaction of calcium and magnesium carbonate with the acidic waste. The pH value is increased to 6.0 - 8.0. This range of pH in the neutralized effluent is generally acceptable for discharge into public sewer systems.

DESIGN CONSIDERATIONS

LabTank Neutralization tanks manufactured by ParkUSA are constructed of quality precast concrete, Class II 4500 PSI @ 28 days. Pre-casting the concrete shell ensures that all units achieve structural and physical uniformity. The units are structurally engineered for H-20 truck loading and can be buried without any need for any other structural protection. The unit is of monolithic construction at the walls and bottom to insure against joint leakage.

An interior liner is installed within the concrete shell, which provides for resistance to abrasion and harsh chemicals. The liner is monolithic at the walls and bottom insuring against leaks. Some common lining materials include; Fiber Reinforced Polyester, High Density Polyethylene, or Polypropylene. The interior lining should be specified which best fits the application's chemical waste and project budget.

Where exterior corrosion control, groundwater impermeability, or dual containment is necessary, an exterior wall liner is a solution. The exterior liner is provided on the concrete outer wall. Some common lining materials include; Bitumastic Waterproofing, Fiber Reinforced Polyester, High Density Polyethylene, or Polypropylene.

Leak detection systems are available to detect primary tank or pipe leakage or groundwater seepage.

The Neutralization Tank is gas-tight, therefore venting is required. During the neutralization process the by-product is carbon dioxide gas that is not toxic, corrosive, or flammable. Venting will allow for the removal of any vapors. Venting is typically accomplished by routing a vent pipe from the tank to the building vent system.

When pH monitoring and/or leak detection is required, several options are available. For budget projects, a visual detection system consisting of an access cover or pipe in the secondary tank is available. Routine inspection is required to ensure warning in the case of a leak. For automatic notification, an electronic pH monitoring and leak detection system is available. This system consists of sensor probes, analyzers, digital chart recorder and notification panel. Contact our engineering department for more information.

MAINTENANCE

The Neutralization Tank should be inspected periodically. Upon inspection, foreign debris should be removed and Chemical Rock added if needed. To summarize, the main steps to follow at maintenance time are cited below.

For more detailed information refer to the Operations and Maintenance Manual.

- Verify pH in the effluent, if below standards, labrox needs to be replaced as first mitigation measure.
- Stop flow passing through the unit.
- Remove all debris and trash present inside.
- Remove old/inert labrox from inside the tank.
- Apply new rock media into the tank.
- Open the flow for operation.
- Verify pH at the effluent again, waiting 30 minutes before taking the first measure to allow for system chemical equilibrium.

SIZING

It is common practice to size the LabTank based on laboratory stations or sinks. In general laboratory applications like schools or hospitals, 10 gph per station of effluent discharge is used. See the chart below.

Acid Neutralization Tank Model ANT Sizes

LABTANK MODEL	NEUTRALIZATION FILL IN LBS	NEUTRALIZATION FILL IN CU. FT	GALLONS	MAXIMUM EFFLUENT GAL/HR	NUMBER OF LAB STATIONS
ANT-50	700	7	50	100	10
ANT-100	1,300	13	100	200	20
ANT-150	2,000	20	150	300	30
ANT-200	2,700	27	200	400	40
ANT-250	3,300	33	250	500	50
ANT-350	4,700	47	350	700	70
ANT-500	6,700	67	500	1,000	100
ANT-700	10,000	94	700	1,400	140
ANT-800	10,700	107	800	1,600	160
ANT-1000	13,400	134	1,000	2,000	200
ANT-1500	20,200	201	1,500	3,000	300
ANT-2000	26,700	267	2,000	4,000	400
ANT-2500	33,400	334	2,500	5,000	500



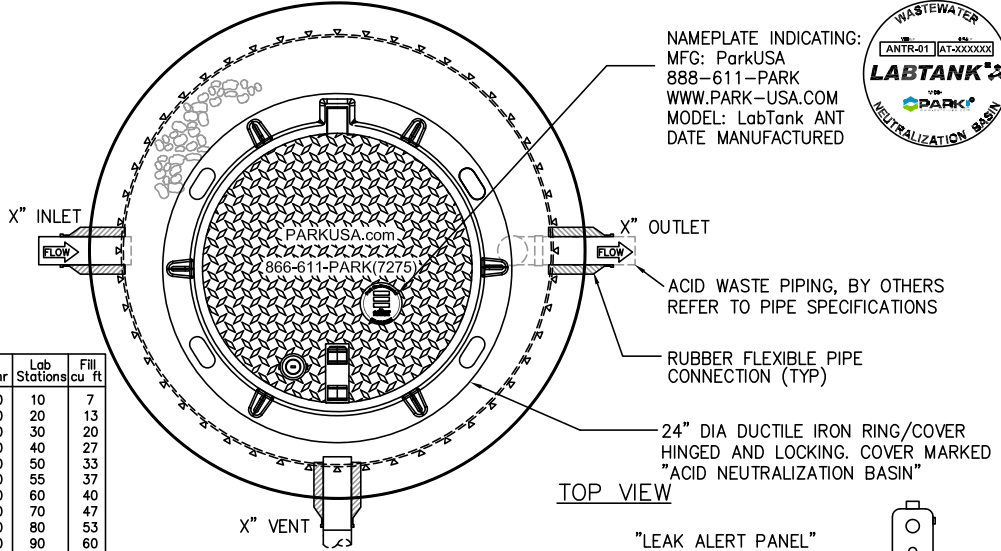
NAMEPLATE INDICATING:
MFG: ParkUSA
888-611-PARK
WWW.PARK-USA.COM
MODEL: LabTank ANT
DATE MANUFACTURED

HOW TO SPECIFY
MODEL NUMBER: ANT [ANT-X]X

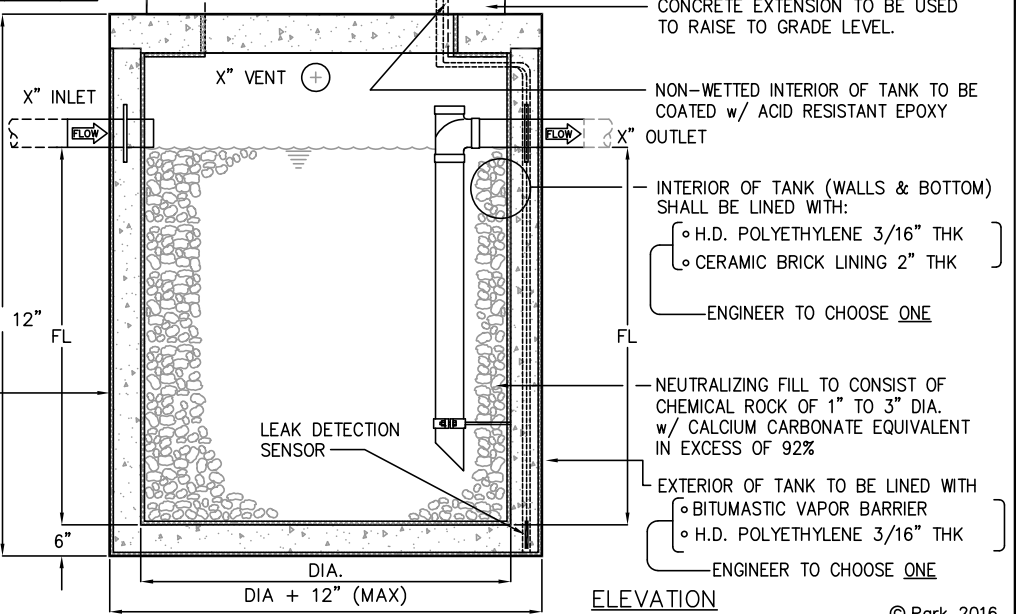
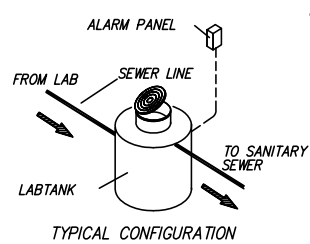
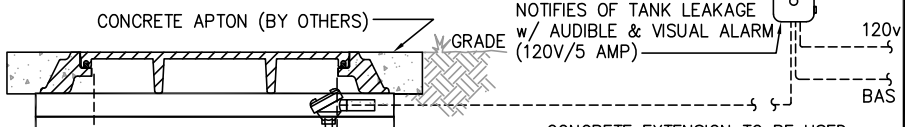
TANK SIZE (GAL)
50 - 50 GAL
100 - 100 GAL
800 - 800 GAL

INTERIOR LINER
P - POLYETHYLENE
C - CERAMIC BRICK

EXTERIOR LINER
B - BITUMASTIC
P - POLYETHYLENE



MODEL	GAL	DIA	D	FL	WT lbs.	Flow gal/hr	Lab Stations	Fill cu ft
ANT50	50	36"	30"	18"	2,750	100	10	7
ANT100	100	36"	36"	24"	3,000	200	20	13
ANT150	150	36"	48"	36"	3,500	300	30	20
ANT200	200	36"	60"	48"	4,000	400	40	27
ANT250	250	36"	72"	60"	4,500	500	50	33
ANT275	275	48"	50"	38"	6,500	550	55	37
ANT300	300	48"	54"	42"	6,800	600	60	40
ANT350	350	48"	60"	48"	7,200	700	70	47
ANT400	400	48"	66"	54"	7,650	800	80	53
ANT450	450	48"	72"	60"	8,100	900	90	60
ANT500	500	60"	54"	42"	10,800	1,000	100	67
ANT600	600	60"	62"	50"	11,500	1,200	120	80
ANT700	700	60"	72"	60"	12,100	1,400	140	94
ANT800	800	72"	58"	46"	14,500	1,600	160	107
ANT1000	1,000	72"	68"	56"	14,500	2,000	200	134
ANT1500	1,500	96"	60"	48"	19,600	3,000	300	201
ANT2000	2,000	96"	74"	62"	21,900	4,000	400	267
ANT2500	2,500	96"	88"	76"	24,200	5,000	500	334



PRECAST CONCRETE OUTER SHELL BE MONOLITHIC CONSTRUCTION NO JOINTS BELOW WATER LEVEL



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Specifications

CONCRETE : Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.

REINFORCEMENT: Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal.

D.I. CASTINGS: Manhole frames, covers or grates are manufactured of ductile iron conforming to ASTM A536, AASHTO M306, & AASHTO M105 Standards. Manhole shall be nominal 24" diameter and be traffic duty.

Engineering Data

Neutralization tank is structurally and hydraulically engineered conforming to Uniform Plumbing Code. Refer to Sizing Table for capacity.

Field excavation and preparation shall be completed prior to delivery of interceptor. Use dimensional data as shown.

PROJECT: X
CUSTOMER: X
ENGINEER: X
ORDER #: X
DATE: X
PROJ #:



LABTANK

ACID NEUTRALIZING TANK
MODEL ANT

ANT-01	PM	DRN	ENG	DWG. NO.	REV.
	DATE	10/15		ANT-01	A

LABTANK[®]

Acid Neutralization System



PARK
USA
A Northwest Pipe Company

ENGINEERING FACTS

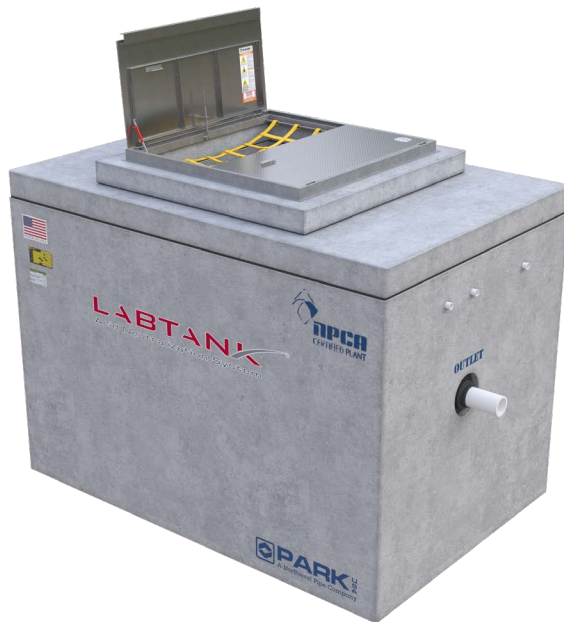
GENERAL INFORMATION

When plumbing drainage systems contain the discharge of corrosive, toxic and flammable wastes, special attention should be placed in treating the waste. Untreated waste can physically damage a building's plumbing system as well as the environment. Hospitals, laboratories and industrial plants with this type of wastewater are common applications that require the treatment.

The ParkUSA LabTank® Neutralization Tank is designed so that acidic waste is collected and passed through the tank prior to discharging into the sanitary sewer system. The waste is chemically neutralized within the unit. It is important to note that the tank is an acid neutralizer. For optimal tank performance it is not recommended that acidic waste be further diluted prior to neutralization. Therefore, all acidic effluent should be gathered separately from other non-acidic waste and non-acidic waste should bypass the neutralization tank."

The ANMS model is a system which effectively neutralizes and monitors acidic wastewater which may otherwise be harmful to plumbing drainage systems as well as to the environment. The main characteristic of this unit is the incorporation of a monitor system to control and verify acidic levels.

The LabTank Model ANMS Acid Neutralization System is the ultimate solution for a packaged direct-bury, inline wastewater neutralizer. The ANMS system is multiple compartment composite tank system having a high strength pre-cast concrete vault enclosure, an interior polyethylene neutralization tank, and an interior polyethylene sample well tank. This system is performance monitored with an advanced LabTank pH monitoring and reporting system. This monitoring system can provide digital recording, remote alerts, and web-based monitoring.



When plumbing drainage systems that contain the discharge of corrosive, toxic and flammable wastes, special attention should be placed in treating the flow. Such untreated waste can physically damage buildings plumbing system as well as the environment.

OPERATION

The Acid Neutralization Tank Model ANMS is a special model available. Operation occurs following chemical processes. Acids and alkalis can be neutralized, rendering them harmless. The degree of neutralization can be measured by the pH system (concentration of hydrogen ion). Acid pH values range from 0 to 6.99, a neutral solution is seven and alkalis range from 7.01 to 14. The smaller the pH value, the higher the content of acidic waste. The larger the pH value the higher the content of alkaline waste. The neutralization process occurs by the chemical reaction of calcium and magnesium carbonate with the acidic waste. The pH value is increased to 6.0 - 8.0. This range of pH in the neutralized effluent is generally acceptable for discharge into public sewer systems.

If the measured pH of the effluent is out of this range, the monitoring system will activate an audible/visual alarm at the control panel to notify the building engineer. The pH values are continually recorded on the digital chart recorder at the control panel to satisfy EPA requirements.

Labrox composition

OXIDE BASIS	
SILICON DIOXIDE (SIO2)	0.104%
ALUMINUM OXIDE (AI2O3)	0.061%
MAGNESIUM OXIDE (MGO)	30.810%
STRONTIUM OXIDE (SRO)	21.390%
MANGANESE OXIDE (MNO)	0.046%
IRON AS FERRIC OXIDE (FE2O3)	0.009%
TITANIUM OXIDE (TIO2)	0.045%
PHOSPHORUS PENTOXIDE (P2O6)	0.003%
CARBON DIOXIDE (CO2)	0.006%
WATER OF MINERALIZATION (H2O)	47.490%
SULFUR TRIOXIDE (SO3)	0.020%
SULFUR TRIOXIDE (SO3)	0.049%
SULFIDE SULFUR (S)	0.020%
TOTAL	100.053%

SYSTEM COMPONENTS

The ParkUSA ANMS is available with the following components:

Concrete Box: The vault is constructed of precast concrete with an interior and exterior waterproof liner. The unit is equipped with an access hatchway and ladder.

Labrox: Medium that can be either a lump limestone or marble 1 to 3 inches in size with a high calcium carbonate equivalent content in excess of 95 percent. For a waste containing predominantly sulfuric acid, a dolomitic limestone is preferred, Dolomitic limestone contains a high percentage of magnesium carbonate in addition to the calcium carbonate. A smaller size fill should not be used as it tends to solidify and prevent passage of liquid. A full charge of neutralizing fill is to fill the invert of the tank inlet. See Table below for composition.

MINERALOGICAL COMPOSITION	
QUARTZ (SIO2)	0.033%
KAOLINITA (AI2O3.2SIO2.2H2O)	0.152%
DOLOMITE (CACO3.MGCO3)	99.701%
LIMONITE (2FE2O3.3H2O)	0.015%
PYRITE (FES2)	0.037%
CELESTITE (SRSO4)	0.082%
ANHYDRITE (CASO4)	0.022%
RUTILE (TIO2)	0.003%
APATITE (3CAO.P2O6)	0.011%
RHODOCHROSITE (MNCO3)	0.015%
TOTAL	100.071%

TYPICAL COMPOSITION OF RAW DOLOMITE	
CALCIUM CARBONATE	54+%
MAGNESIUM CARBONATE	45+%
TOTAL CARBONATE	99+%

Interior HDPE Tank: This tank is constructed of high density polyethylene and wrapped with a fiberglass casing. The tank contains chemical rock whose function is to perform the neutralization of the acidic wastewater. The chemical rock consists of lump limestone or marble 1 to 3 inches in size and should have a calcium carbonate content of at least 92 percent. The chemical rock is expendable during normal operation. Standard tank sizes are 30 to 2000 gallons.

15 Gallons Sampling Tank: This tank is constructed of high-density polyethylene. The tank houses a pH sensor probe for the sampling of wastewater effluent from the Acid Neutralization Tank. The corresponding pH analyzer is identified as Primary System at the control panel.

Wet Sump: The wet sump is located in the floor of the concrete vault. As the name implies, this sump may contain water. A sump pump is located here. As water accumulates, the pump will automatically transfer water into the sewer. A buoyancy sensor will detect high water level in the secondary vault in the event of pump failure.

Control Panel: The control panel is equipped with pH/conductivity analyzers and a digital chart recorder. Monitoring data is digitally recorded to a memory card for instant access or downloaded to a computer.

Where exterior corrosion control, groundwater impermeability, or dual containment is necessary, an exterior wall liner is a solution. The exterior liner is provided on the concrete outer wall. Some common lining materials include; Bitumastic Waterproofing, Fiber Reinforced Polyester, High Density Polyethylene, or Polypropylene.

Leak detection systems are available to detect primary tank or pipe leakage or groundwater seepage.

The Neutralization Tank is gas-tight, therefore venting is required. During the neutralization process the by-product is carbon dioxide gas that is not toxic, corrosive, or flammable. Venting will allow for the removal of any vapors. Venting is typically accomplished by routing a vent pipe from the tank to the building vent system.

When pH monitoring and/or leak detection is required, several options are available. For budget projects, a visual detection system consisting of an access cover or pipe in the secondary tank is available. Routine inspection is required to ensure warning in the case of a leak. For automatic notification, an electronic pH monitoring and leak detection system is available. This system consists of sensor probes, analyzers, digital chart recorder and notification panel. Contact our engineering department for more information.

DESIGN CONSIDERATIONS

LabTank Neutralization tanks manufactured by ParkUSA are constructed of quality precast concrete, Class II 4500 PSI @ 28 days. Pre-casting the concrete shell ensures that all units achieve structural and physical uniformity. The units are structurally engineered for H-20 truck loading and can be buried without any need for any other structural protection. The unit is of monolithic construction at the walls and bottom to insure against joint leakage.

SIZING

It is common practice to size the LabTank based on laboratory stations or sinks. In general laboratory applications like schools or hospitals, 10 gph per station of effluent discharge is used.

Acid Neutralization Tank Model ANMS Sizes

LABTANK MODEL	NEUTRALIZATION FILL IN LBS	NEUTRALIZATION FILL IN CUBIC FEET	GALLONS	MAXIMUM EFFLUENT GAL/HR	NUMBER OF LAB STATIONS
ANMS-0030	400	4	30	60	6
ANMS-0050	700	7	50	100	10
ANMS-0100	1,300	12	100	200	20
ANMS-0150	2,000	20	150	300	30
ANMS-0200	2,700	27	200	400	40
ANMS-0250	3,300	33	250	500	50
ANMS-0350	4,700	47	350	700	70
ANMS-0500	6,700	67	500	1,000	100
ANMS-0700	10,000	94	700	1,400	140
ANMS-0800	10,700	107	800	1,600	160
ANMS-1000	13,400	135	1,000	2,000	200
ANMS-2000	26,700	267	2,000	4,000	400

MAINTENANCE

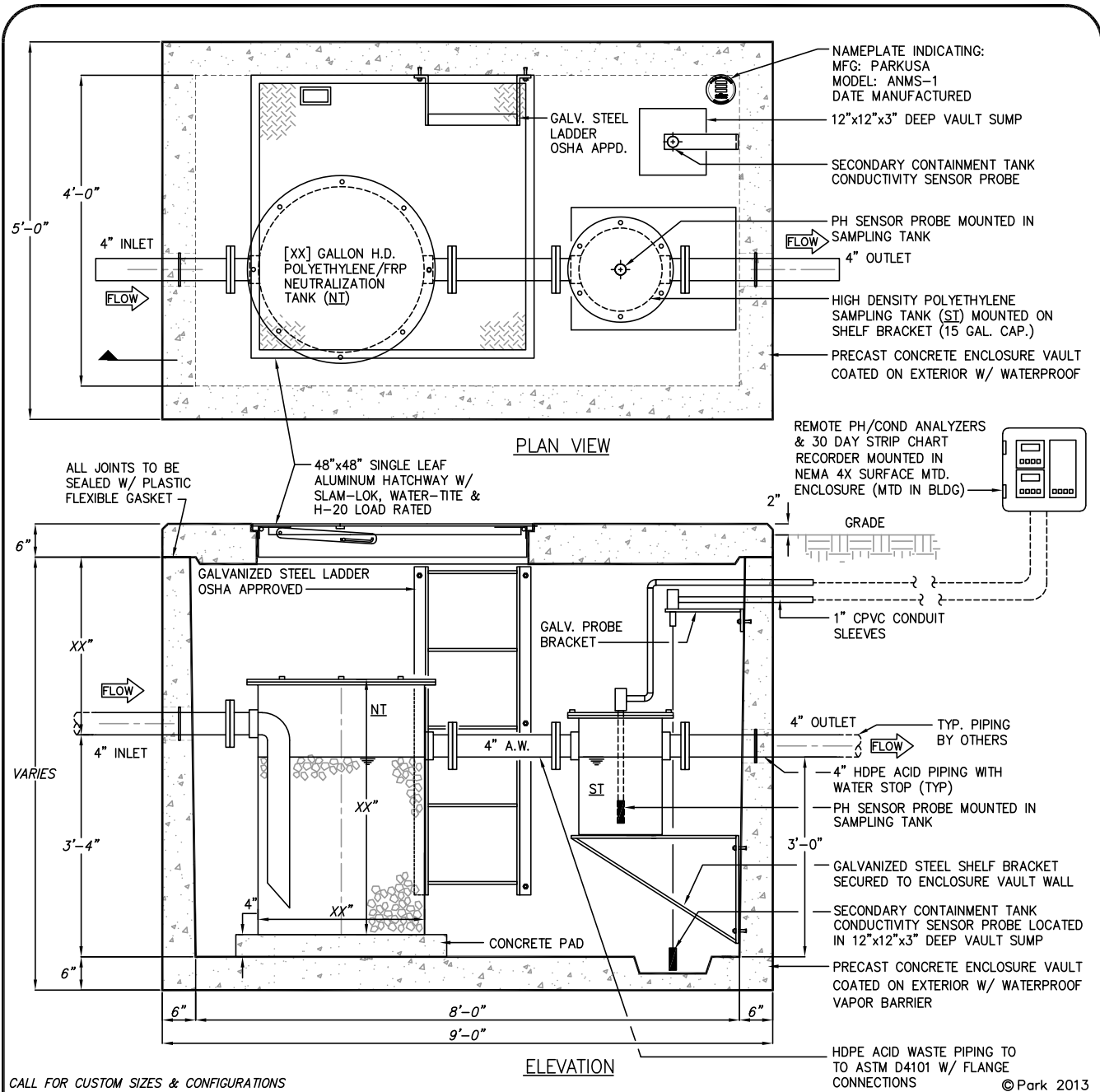
The Neutralization Tank should be inspected periodically. Upon inspection, foreign debris should be removed and Chemical Rock added if needed. To summarize, the main steps to follow at maintenance time are cited below. For more detailed information refer to the Operations and Maintenance Manual.

- Verify pH in the effluent, if below standards, labrox needs to be replaced as first mitigation measure.
- Stop flow passing through the unit.
- Remove all debris and trash present inside.
- Remove old/inert labrox from inside the tank.
- Apply new rock media into the tank.
- Open the flow for operation.
- Verify pH at the effluent again, waiting 30 minutes before taking the first measure to allow for system chemical equilibrium.

The Sampling Tank should be inspected on an annual basis. Upon inspection, foreign debris should be removed and the pH probe should be cleaned and inspected (refer to O&M manual).

The Secondary Vault should be inspected on an annual basis. The sump may contain water (due to condensation or ground water). If the water level reaches a certain depth, the sump pump pumps the water into the sewer. The sump pump shall be inspected annually for proper operation.

The Control Panel should be inspected on a monthly basis. Upon inspection, verify the proper operation of the pH analyzer and the chart recorder. The chart recorder contains a memory card, which digitally records at one minute intervals. This card can be removed for downloading data to a personal computer. The memory card should be replaced at one-year intervals. Identify and store the removed card in a safe location for future reference.



Specifications

- CONCRETE :** Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth. Combined assembly weight as indicated.
- REINFORCEMENT:** Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.
- HATCHWAY:** 1/4" aluminum skid-resistant floor plate welded to angle frame with s.s. hinges, slam-lok & door supports.

Engineering Data

Field excavation and preparation shall be completed prior to delivery of assembly. Use dimensional data as shown.

Manufacturer shall provide shop drawings certified by a licensed professional engineer.



PROJECT :	
CUSTOMER :	
ARCHITECT :	
ENGINEER :	
ORDER # :	DATE :



**ACID NEUTRALIZING/MONITOR SYSTEM
MODEL ANMS - 50 THRU 275 GALLONS**

SCALE	NONE	DWG. NO.	REV.
	DATE		05/13

MODEL ANPT



PARK USA
A Northwest Pipe Company

ENGINEERING FACTS

GENERAL INFORMATION

When plumbing drainage systems contain the discharge of corrosive, toxic and flammable wastes, special attention should be placed in treating the waste. Untreated waste can physically damage a building's plumbing system as well as the environment. Hospitals, laboratories and industrial plants with this type of wastewater are common applications that require the treatment.

The ParkUSA LabTank® Neutralization Tank is designed so that acidic waste is collected and passed through the tank prior to discharging into the sanitary sewer system. The waste is chemically neutralized within the unit. It is important to note that the tank is an acid neutralizer. For optimal tank performance it is not recommended that acidic waste be further diluted prior to neutralization. Therefore, all acidic effluent should be gathered separately from other non-acidic waste and non-acidic waste should bypass the neutralization tank."

The ANPT model present a concrete box with an interior polyethylene tank. This product is a moderately priced solution for a direct-bury, inline wastewater neutralizer. The ANPT tank is single compartment composite tank system having a high strength precast concrete vault enclosure and an interior polyethylene tank.

SYSTEM COMPONENTS

The ParkUSA ANPT is available with the following components:

Concrete Box: secondary containment vault, designed to hold the interior polyethylene tank.

Interior Polyethylene Tank (ANP): designed to contain the labrox neutralizing media.

Labrox: Medium that can be either a lump limestone or marble 1 to 3 inches in size with a high calcium carbonate equivalent content in excess of 95 percent. For a waste containing predominantly sulfuric acid, a dolomitic limestone is preferred, Dolomitic limestone contains a high percentage of magnesium carbonate in addition to the calcium carbonate. A smaller size fill should not be used as it tends to solidify and prevent passage of liquid. A full charge of neutralizing fill is to the invert of the tank inlet.

Labrox composition

OXIDE BASIS	
SILICON DIOXIDE (SiO ₂)	0.104%
ALUMINUM OXIDE (Al ₂ O ₃)	0.061%
MAGNESIUM OXIDE (MgO)	30.810%
STRONTIUM OXIDE (SrO)	21.390%
MANGANESE OXIDE (MnO)	0.046%
IRON AS FERRIC OXIDE (Fe ₂ O ₃)	0.009%
TITANIUM OXIDE (TiO ₂)	0.045%
PHOSPHORUS PENTOXIDE (P ₂ O ₆)	0.003%
CARBON DIOXIDE (CO ₂)	0.006%
WATER OF MINERALIZATION (H ₂ O)	47.490%
SULFUR TRIOXIDE (SO ₃)	0.020%
SULFUR TRIOXIDE (SO ₃)	0.049%
SULFIDE SULFUR (S)	0.020%
TOTAL	100.053%

MINERALOGICAL COMPOSITION

QUARTZ (SiO ₂)	0.033%
KAOLINITA (Al ₂ O ₃ .2SiO ₂ .2H ₂ O)	0.152%
DOLOMITE (CaCO ₃ .MgCO ₃)	99.701%
LIMONITE (2Fe ₂ O ₃ .3H ₂ O)	0.015%
PYRITE (FeS ₂)	0.037%
CELESTITE (SrSO ₄)	0.082%
ANHYDRITE (CaSO ₄)	0.022%
RUTILE (TiO ₂)	0.003%
APATITE (3CaO.P ₂ O ₆)	0.011%
RHODOCHROSITE (MnCO ₃)	0.015%
TOTAL	100.071%

TYPICAL COMPOSITION OF RAW DOLOMITE

CALCIUM CARBONATE	54+%
MAGNESIUM CARBONATE	45+%
TOTAL CARBONATE	99+%

When plumbing drainage systems that contain the discharge of corrosive, toxic and flammable wastes, special attention should be placed in treating the flow. Such untreated waste can physically damage buildings plumbing system as well as the environment.

OPERATION

The Acid Neutralization Tank Model ANPT is a special model available. Operation occurs following chemical processes. Acids and alkalies can be neutralized, rendering them harmless. The degree of neutralization can be measured by the pH system (concentration of hydrogen ion). Acid pH values range from zero to 6.99, a neutral solution is seven and alkalies range from 7.01 to 14. The smaller the pH value, the higher the content of acidic waste. The larger the pH value the higher the content of alkaline waste. The neutralization process occurs by the chemical reaction of calcium and magnesium carbonate with the acidic waste. The pH value is increased to 6.0 - 8.0. This range of pH in the neutralized effluent is generally acceptable for discharge into public sewer systems.

DESIGN CONSIDERATIONS

LabTank Neutralization tanks manufactured by ParkUSA are constructed of quality precast concrete, Class II 4500 PSI @ 28 days. Pre-casting the concrete shell ensures that all units achieve structural and physical uniformity. The units are structurally engineered for H-20 truck loading and can be buried without any need for any other structural protection. The unit is of monolithic construction at the walls and bottom to insure against joint leakage.

Where exterior corrosion control, groundwater impermeability, or dual containment is necessary, an exterior wall liner is a solution. The exterior liner is provided on the concrete outer wall. Some common lining materials include; Bitumastic Waterproofing for this model.

The Neutralization Tank is gas-tight, therefore venting is required. During the neutralization process the by-product is carbon dioxide gas that is not toxic, corrosive, or flammable. Venting will allow for the removal of any vapors. Venting is typically accomplished by routing a vent pipe from the tank to the building vent system.

The Acid Neutralization tank shall be constructed of virgin high density polyethylene conforming to ASTM D1248 for polyolefin materials. Tank exterior lining to consist of 3/8-inch reinforced fiberglass (FRP). Tank shall be self-supporting and rated for continuous operation temperature of 160 degrees Fahrenheit, and intermittent operation at 200 degrees Fahrenheit. Tank shall be provided with minimum 24-inch diameter gasketed and bolted manhole with stainless steel nuts and bolts. Inlet/outlet/vent pipefittings shall be made of polyethylene and fusion welded to tank. Tank shall be charged with limestone in accordance with manufacturer's recommendation prior to putting in service.

SIZING

It is common practice to size the LabTank based on laboratory stations or sinks. In general laboratory applications like schools or hospitals, 10 gph per station of effluent discharge is used. See the chart below.

MAINTENANCE

The Neutralization Tank should be inspected periodically. Upon inspection, foreign debris should be removed and Chemical Rock added if needed. To summarize, the main steps to follow at maintenance time are cited below. For more detailed information refer to the Operations and Maintenance Manual.

- Verify pH in the effluent, if below standards, labrox needs to be replaced as first mitigation measure.
- Stop flow passing through the unit.
- Remove all debris and trash present inside.
- Remove old/inert labrox from inside the tank.
- Apply new rock media into the tank.
- Open the flow for operation.
- Verify pH at the effluent again, waiting 30 minutes before taking the first measure to allow for system chemical equilibrium.

Acid Neutralization Tank Model ANPT Sizes

	ANP-T15	ANP-T30	ANPT-55	ANPT-100	ANPT-150	ANPT-200	ANPT-275
GAL CAP	15	30	55	100	150	200	275
INLET A	10"	2'-1"	2'-3"	2'-10"	3'-2"	3'-9"	3'-2"
OUTLET B	10"	2'-1"	2'-3"	2'-10"	3'-2"	3'-9"	3'-2"
VENT C	12"	2'-3"	2'-9"	3'-2"	3'-6"	4'-2"	3'-4"
DIA D	17"	17"	24"	28"	30"	36"	42"
HEIGHT E	16"	31"	34"	42"	48"	53"	48"
COVER F	24"	24"	24"	30"	30"	42"	42"
VAULT X	36"	36"	36"	48"	48"	48"	60"

LABTANK[®]

Acid Neutralization System




PARK USA
A Northwest Pipe Company

ENGINEERING FACTS

GENERAL INFORMATION

When plumbing drainage systems contain the discharge of corrosive, toxic and flammable wastes, special attention should be placed in treating the waste. Untreated waste can physically damage a building's plumbing system as well as the environment. Hospitals, laboratories and industrial plants with this type of wastewater are common applications that require the treatment.

The ParkUSA LabTank® Neutralization Tank is designed so that acidic waste is collected and passed through the tank prior to discharging into the sanitary sewer system. The waste is chemically neutralized within the unit. It is important to note that the tank is an acid neutralizer. For optimal tank performance it is not recommended that acidic waste be further diluted prior to neutralization. Therefore, all acidic effluent should be gathered separately from other non-acidic waste and non-acidic waste should bypass the neutralization tank."

The ANTC model present a steel shell with a ceramic brick interior liner, it provides efficient neutralization when the flow presents highly acidic waters.

The ParkUSA Ceramic Lined Acid Tank is an excellent choice when standard acid resistant materials are not enough (i.e. epoxy coatings, fiberglass or plastics). The ceramic liner offers permanent protection even in the harshest corrosive environments and is designed to last the life of the building.

The key to this kind of durability is the internal ceramic liner. Made up of an impermeable membrane overlaid with acid proof brick, this type of liner has a long history of performance where resistance to liquid and gaseous acid media is present. In the Pulp & Paper Industry, the brick is the preferred material of choice for lining bleach towers, generating tanks and waste acid tanks.

The acid proof brick is manufactured from a blend of selected clays with controlled particle size, fully de-aired and fired to vitrification at 1121 degrees Celsius. This assures an exceptionally dense and highly vitrified brick which meets ASTM C279 Type H specifications.

OPERATION

The Acid Neutralization Tank Model ANTC is a special model available. Operation occurs following chemical processes. Acids and alkalies can be neutralized, rendering them harmless. The degree of neutralization can be measured by the pH system (concentration of hydrogen ion). Acid pH values range from zero to 6.99, a neutral solution is seven and alkalies range from 7.01 to 14. The smaller the pH value, the higher the content of acidic waste. The larger the pH value the higher the content of alkaline waste. The neutralization process occurs by the chemical reaction of calcium and magnesium carbonate with the acidic waste. The pH value is increased to 6.0 - 8.0. This range of pH in the neutralized effluent is generally acceptable for discharge into public sewer systems.

When plumbing drainage systems that contain the discharge of corrosive, toxic and flammable wastes, special attention should be placed in treating the flow. Such untreated waste can physically damage buildings plumbing system as well as the environment. Laboratories and industrial plants are common applications that require the treatment of this type of waste.

SYSTEM COMPONENTS

The ParkUSA ANTC is available with the following components:

Steel Shell: base structure containing the acid neutralization rocks "Labrox". This shell can also be made of concrete depending on model and application.

Labrox: medium that can be either a lump limestone or marble 1 to 3 inches in size with a high calcium carbonate equivalent content in excess of 95 percent. For a waste containing predominantly sulfuric acid, a dolomitic limestone is preferred. Dolomitic limestone contains a high percentage of magnesium carbonate in addition to the calcium carbonate. A smaller size fill should not be used as it tends to solidify and prevent passage of liquid. A full charge of neutralizing fill is to the invert of the tank inlet.

Liners: Liners are available for each model, including; exterior/interior high density polyethylene (HDPE) for model ANT, and ceramic brick for model ANTC.

High Density Polyethylene (HDPE): HDPE is a high quality abrasive and chemical resistant thermoplastic with high stress crack and impact resistance. HDPE has high structural rigidity and moderately high continuous operating temperature rating, up to 160 degrees Fahrenheit. The lining system is manufactured from 3/16-inch thick thermoplastic sheets with anchor studs for embedding into the concrete outer shell. The welded panels form an interior or exterior lining which becomes an integral part of the concrete structure.

Ceramic Brick Lining: The ceramic brick liner is the solution when fiberglass or plastic liners do not offer adequate protection. The ceramic brick liner offers permanent protection even in the harshest of chemical environments. This type of liner has traditionally been used in industrial applications such as Pulp & Paper Mills and Oil/Gas Refineries. The ceramic liner system consists of an impermeable membrane overlaid with acid proof brick. The liner can be applied to steel or concrete tanks.

DESIGN CONSIDERATIONS

The acid neutralization basin shall be constructed of an atmospheric type steel vessel with structural strength to withstand static and dynamic loading while empty and during operating conditions. The vessel shall have interior and exterior liners intended for use in storage and/or neutralization of corrosive wastewater.

The acid neutralization tank shell shall be constructed of 3/4-inch thick carbon steel and welded in accordance to AWS D.1.1. Tank shall include lifting lugs and manways as required. All welds shall be continuous double butt and ground smooth. All corners and edges shall be rounded by grinding to remove points and sharpness. Any braces, supports or other attachments inside must be fitted flat against the adjacent surface and full welded from all sides. Heavy metal splatter on the steel surface shall be removed by grinding and any deep scars, pits or points must be filled in or ground as required to remove sharp edges. Out of roundness of steel basin shall not exceed $\pm \frac{1}{2}$ of one percent of diameter. Tank shall be hydrostatically tested for minimum of 24 hours to ensure water tightness. Any welding, cutting, or modification to the welds, floor plate, or welded structure which would alter the water tightness of the tank must be vacuum tested per API 650, Supplement No. 3-5 Vacuum Testing.

All interior and exterior steel surfaces, flange faces, and bells shall be abrasively blasted to a White Metal finish conforming to SSPCSP5 or NACE #1, 2 or 3 mil profile. After blasting, the interior of tank shall be cleaned and primed and an Atlastic™ elastomeric asphaltic liner applied to form a seamless monolithic membrane to a thickness of not less than 3/4 inch. Electrostatic holiday testing of the liner shall be performed to insure against pinholes.

After the membrane application, a 2-inch thick ceramic brick liner shall be applied to the interior walls and bottom of the basin. The acid proof brick shall be manufactured in accordance to ASTM C279 Type H specifications and be classed as medium duty refractories and usable to a temperature of 1315° C. The chemical analysis (by weight) shall be: SiO₂ 63.1 percent, Al₂O₃ + TiO₃ 25.1 percent, Fe₂O₃ 1.5 percent, CaO 0.2 percent, MgO 0.5 percent, Na₂O + K₂O 2.5 percent, Loss of Ignition 7.1 percent. The acid brick liner shall be applied with a chemical resistant 100 percent carbon filled furan mortar. The exterior of basin and shall be coated with a Permaflex™ 1100 chemical resistant epoxy coating, minimum 50 mils thickness. The inlet, outlet, and vent connections shall have a bell type connection and be chemical resistant.

SIZING

It is common practice to size the LabTank based on laboratory stations or sinks. In general laboratory applications like schools or hospitals, 10 gph per station of effluent discharge is used. See the chart below.

MAINTENANCE

The Neutralization Tank should be inspected periodically. Upon inspection, foreign debris should be removed and Chemical Rock added if needed. To summarize, the main steps to follow at maintenance time are cited below.

For more detailed information refer to the Operations and Maintenance Manual.

- Verify pH in the effluent, if below standards, labrox needs to be replaced as first mitigation measure.
- Stop flow passing through the unit.
- Remove all debris and trash present inside.
- Remove old/inert labrox from inside the tank.
- Apply new rock media into the tank.
- Open the flow for operation.
- Verify pH at the effluent again, waiting 30 minutes before taking the first measure to allow for system chemical equilibrium.

Acid Neutralization Tank Model ANTC Sizes

TANK MODEL	DIMENSIONS A X B	INLET/ OUTLET SIZE	CHEMICAL ROCK LBS	VOLUME CUBIC FEET	NOMINAL GALLONS	MAXIMUM EFFLUENT GAL/HR	NUMBER OF LAB STATIONS
ANTC-0015	30" X 23"	2" - 6"	200	2.0	15	45	2 - 5
ANTC-0030	24" X 32"	2" - 6"	400	4.0	30	90	6 - 10
ANTC-0055	36" X 32"	2" - 6"	750	7.4	55	165	16
ANTC-0100	36" X 45"	2" - 6"	1,500	14	100	300	30
ANTC-0125	36" X 54"	2" - 6"	1,750	17	125	375	38
ANTC-0150	36" X 62"	2" - 6"	2,000	20	150	450	45
ANTC-0200	40" X 81"	2" - 6"	2,700	27	200	600	60
ANTC-0270	46" X 81"	2" - 6"	3,500	35	270	800	80
ANTC-0335	48" X 87"	2" - 6"	4,500	45	335	1,000	100
ANTC-0525	54" X 99"	4" - 6"	7,000	70	525	1,500	150
ANTC-0675	60" X 99"	4" - 6"	9,000	90	675	2,000	200
ANTC-1020	72" X 99"	4" - 6"	13,500	135	1,020	3,000	300
ANTC-1350	82" X 102"	4" - 6"	18,000	180	1,350	4,000	400
ANTC-1720	92" X 102"	4" - 6"	23,000	130	1,720	5,000	500
ANTC-2020	96" X 107"	6" - 8"	27,000	270	2,020	6,000	600
ANTC-2400	102" X 108"	6" - 8"	32,000	320	2,400	7,000	700
ANTC-2700	108" X 109"	6" - 8"	36,000	360	2,700	8,000	800
ANTC-3000	114" X 111"	6" - 10"	40,000	400	3,000	9,000	900
ANTC-3370	114" X 119"	6" - 10"	45,000	450	3,370	10,000	1,000



Model ANTC

Acid Neutralization Systems

When plumbing drainage systems contain the discharge of corrosive, toxic and flammable wastes, special attention should be placed in treating the waste. Untreated waste can physically damage a building's plumbing system as well as the environment. Hospitals, laboratories and industrial plants with this type of wastewater are common applications that require the treatment.

The ParkUSA LabTank® Neutralization Tank is designed so that acidic waste is collected and passed through the tank prior to discharging into the sanitary sewer system. The waste is chemically neutralized within the unit. It is important to note that the tank is an acid neutralizer. For optimal tank performance it is not recommended that acidic waste be further diluted prior to neutralization. Therefore, all acidic effluent should be gathered separately from other non-acidic waste and non-acidic waste should bypass the neutralization tank."

LABTANK

Acid Neutralization System

Features

- Sizes from 15 gallons to 5,000 gallons
- EPA & Code Compliant
- Choices of interior protective liners
- pH, Temperature, & Leak Detection Monitoring
- Prepacked system for easy installation
- High-strength precast concrete, steel, or fiberglass construction



Control Panel

LabTank control systems are available for neutralization wastewater management; pH monitoring, tank high level, and tank leak detection.



#BUILDING AMERICA!

WW | LABTANK Standard



Model ANMS



Model ANPT



Model ANT

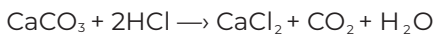


Model ANT-PP

How it Works

The pH scale ranges from 0 to 14. Acid pH values range from 0 to 6.99, a neutral solution is 7, and alkalis range from 7.01 to 14. A lower pH value indicates acidic waste, while a higher pH value indicates a more alkaline waste. Wastewater with a pH range of 6 to 8 is generally acceptable for public sewer discharge.

The LabTank® system works by enabling the wastewater to have a chemical reaction with a neutralization media. This passive neutralization process occurs when acidic wastewater comes in contact with limestone media, in which Calcium Carbonate (CaCO₃) is the primary constituent. The following formula depicts the neutralization process of hydrochloric acid by limestone:



The reaction results in neutralized wastewater, harmless gas, and salts. The neutralization media gives up mass in this chemical process and dissolves over time, therefore limestone media needs to be added periodically to maintain recommended tank levels.

Visit labtank.parkusa.com for more information and design assistance.

To request a quote or catalog, visit request.parkusa.com.

System Components

The LabTank is available with the following components:

Neutralization Tank - The tank is a structurally designed and chemical-proof structure containing the neutralization media. The tank is equipped with a gas-tight access cover that stands up to vehicle traffic loading.

Neutralization Media - Our LabRox media is a 1"-3" size high-grade natural material with a high calcium carbonate equivalent content in excess of 95%. For a waste containing predominantly sulfuric acid, our LabRox HCL is recommended; A dolomitic limestone media containing a high percentage of magnesium carbonate in addition to the calcium carbonate.

Monitoring - Automatic electronic monitoring provides for 24/7 environmental awareness for pH, Level, Temperature, and Leak Detection.

Liners - Tank liners are available to provide the best fit for the application; HD Polyethylene, Polypropylene, Stainless Steel, and Ceramic Brick.



Model ANTC

APPLICATIONS



Medical Facilities



Laboratories



Schools



Universities



Industrial



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**ENGINEERING
FACTS**

GENERAL INFORMATION

Toxic wastewater is generated as a result of decontamination activities performed at medical facilities that may contain CBR substances. According to the current IPC and UPC codes, chemical drainage shall be completely separated from the sanitary sewer system (Chapter 8, Section 803.3, IPC 2009). The ParkUSA DeconTank, is specifically designed to control decontamination wastewater for the protection of personnel and the public sewer system.

For permanent installations utilizing gravity flow drainage, a below grade tank is recommended. There are two types of tanks:

The DeconTank "Holding" Tank is a tank that is plumbed with open shut valves that allow the discharge of decontamination wastewater to the sanitary sewer system after it is determined to be an allowable discharge. If outlet pipe from the tank extends and connects to a public sewer line, then the tank is considered as part of the building plumbing. The tank should comply with local plumbing regulations.

DECONTANK MODELS

DeconTank "Storage" Tank is a holding tank that is not directly connected to a public sewer line (such that it would require pumping to empty it) and is considered a "storage tank". The manhole should not be less than 20 inches in size. All manholes should extend to grade. The interceptor should be located near the source of the wastewater for the protection of the piping system.

Toxic wastewater is generated as a result of decontamination activities performed at medical facilities that may contain CBR substances. According to the current IPC and UPC codes, chemical drainage shall be completely separated from the sanitary sewer system.

FEATURES

- Various Models Available for Different Environments
- Easy pH Estimations
- Several Coatings and Liners Available
- Easy Maintenance
- Prepacked and Pre-wired System for Easy Installation
- Unitized Control Panel with Easy User Interface
- Remote Alarm Connection Ready
- Meets all Building Codes



Interior Liner Model



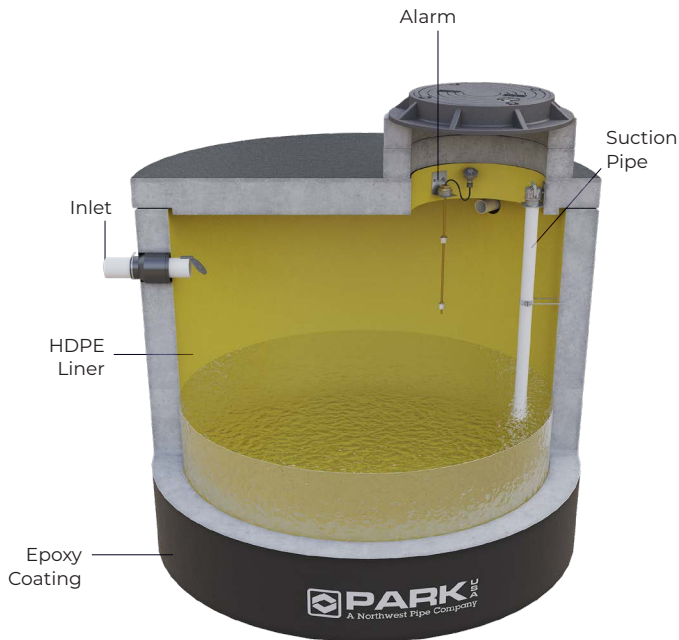
Interior and Exterior Liner Model



Fiberglass Model

SYSTEM COMPONENTS

The ParkUSA DeconTank Series is manufactured of Class II 4500 PSI precast concrete. Pre-casting the concrete shell insures that all units achieve structural and physical uniformity. The units are structurally engineered for H-20 truck loading and can be buried without any need for any other structural protection. The unit is of monolithic construction to insure against joint leakage with an interior liner of composite or stainless steel. The exterior is coated with Bitumastic or lined with composite for secondary containment. The ParkUSA DTF DeconTank Series Interceptor is manufactured fiberglass or plastic and is used where lightweight construction is required.



- The tank shall be electronically monitored to ensure tank integrity; primary tank fill level including 50 percent and 95 percent full and secondary leak detection.
- Inspection access covers shall be provided to permit means of taking a water sample to be analyzed prior to removal. Covers shall be traffic duty, watertight and be lockable. Covers to be affixed with a permanent label indicating "Decontamination Tank", size and manufacturer.
- The tank shall be vented to an independent system, terminating in open air and sized adequately.
- Tank shall be equipped with a leak-proof quick-disconnect coupler to match connection to waste hauler equipment.
- The Tank shall have an inlet piping connection adequately sized based on drainage fixture load of incoming fixture(s).
- If valves are used (for Holding Tanks), valves shall be normally closed and be a full diameter with no restriction created when fully open.
- If pumps are used, the pumps shall be chemical resistant and explosion proof and be sized adequately.

MAINTENANCE

The Decontamination Tank should be inspected periodically. Upon inspection, foreign debris should be removed and interior layer state verified. To summarize, the main steps to follow at maintenance time are cited below. For more detailed information refer to the Operations and Maintenance Manual.

- Verify pH, if below standards, according measures should be taken.
- Stop flow going inside the unit.
- Remove all debris and trash present inside.
- Verify interior layer corrosion and degradation.
- If there is dirt attached to the walls, clean by using the O&M standard method.
- Open the flow for operation.
- Verify pH again, waiting 30 minutes before taking the first measure to allow for system chemical equilibrium.

OPERATION

The ParkUSA Decontamination tank operates to hold or storage specific volumes of contaminated wastewater. The interior liner is designed to protect the tank from corrosion and degradation. Assessment of disposal of waste is needed to comply with most guidelines.

DESIGN CONSIDERATIONS

Decontamination tanks are designed such that:

- The tank system should comply with design requirements being proposed by the federal and state governments and should be state-of-the-art at the time they are installed.
- The tank shall be constructed of precast concrete meeting ASHTO H20 standards.
- The tank shall be watertight and be lined with chemical resistant High-Density Polyethylene materials.
- The tank should provide primary & optional secondary containment.

SIZING

The recommended minimum size of a decontamination holding tank should reflect Best Management Practices (BMP) and economic principles of construction. It is generally recommended that a decontamination holding tank have a capacity of at least 1500 gallons.

The design size of decontamination holding tanks is typically based on the following flow calculations: the number of showers to be taken, the gallon per minute of flow from the shower head or hose, and the time spent in the shower. This calculation should be considered the minimum amount of tank holding capacity available on site:

$$\text{Showers Taken} \times \text{GPM of Shower Head} \times \text{Time in Shower} = \text{Holding Capacity}$$

Example:

Farm accident: Victim pinned under chemical spreader.
On scene, First Responder, Sheriff's Deputy, and two
Emergency Medical Technicians giving assistance.
All on site have been exposed to chemicals. All involved
at incident will be decontaminated at Hospital X.
Hospital X has a decontamination room equipped with
a single stand up shower and one drench hose that deliver
5.5 GPM. The decontamination room is served by one drain.

The calculation is as follows:

4 Stand up showers x 5.5 gpm head x 15 minutes
= 330.0 gallons

1 Drench shower x 5.5 gpm head x 15 minutes = 82.5 gallons
Minimum DeconTank Size = 415.5 gallons

The same calculations using a 20 gallon per minute
deluge shower would require a minimum of a 1,500m
gallon containment tank(s). Current sizes available are
shown below.

Decontamination Tank Model Sizes

MODEL	GAL	DIA	D	FL	WT LBS
DTC-500	500	60"	54"	42"	10,100
DTC-600	600	60"	60"	48"	10,800
DTC-700	700	60"	66"	54"	11,400
DTC-800	800	72"	58"	46"	13,200
DTC-900	900	72"	64"	52"	14,000
DTC-1000	1,000	72"	68"	56"	14,500
DTC-1200	1,200	84"	62"	50"	18,000
DTC-1500	1,500	96"	60"	48"	19,600
DTC-2000	2,000	96"	74"	62"	21,900
DTC-2500	2,500	96"	88"	76"	24,200

MARK QTY	DESCRIPTION
1	XXX GALLON DOUBLE WALL FIBERGLASS HOLDING TANK
2	48" DIA EXTENSION CONTAINMENT COLLAR TO GRADE, XX" TALL
3	50" DIA ACCESS COVER, GALV STEEL, BOLT DOWN & HDG TRAFFIC DUTY W/ 22" DIA WALKWAY COVER WITH GEORGINE COVER TO HAVE A 6" DIA SPIN-ON GASKETED INSPECTION COVER
4	1" PUMP OUT PORT W/ GASKET ADAPTER
5	1" LEAK DETECTION MONITOR PORT W/ NEMA-7 BOX
6	1" LEAK DETECTION MONITOR PORT W/ NEMA-7 BOX
7	4" FPT INLET CONNECTION, DECONTAMINATION SHOWER FROM BUILDING
8	2" VENT TO BUILDING
9	1" PUMP OUT SUCTION TUBE
10	1" PRECAST CONCRETE BALLAST PAD
11	1" TANK HOLD DOWN STRAP (TYP-2)
12	1" LEVEL/LEAK DETECTION & CONTROL WIRING & 3/4" CONDUIT (BY OTHERS)
13	1" LEAK SENSOR PROBE SET @ 75% FULL
14	1" CONCRETE APRON (BY OTHERS)
15	1" RECESSED DECONTAMINATION MANAGEMENT PANEL, NEMA-4X SURFACE MOUNTED, 12" X 12" X 1/2" WITH VISUAL NOTIFICATION, SILENCE SWITCH LOCATE IN NURSE STATION
16	1" 8" ALUMINUM WATER-TIGHT INSPECTION PORT
17	1" 4" HALF COUPLING
18	1" CAST-IN SADDLES
19	1" NAMEPLATE INDICATING: MFG: PARKUSA, MODEL: DTF-XXX, DATE MANUFACTURED
20	1" NOT USED
21	1" NOT USED
22	1" NOT USED

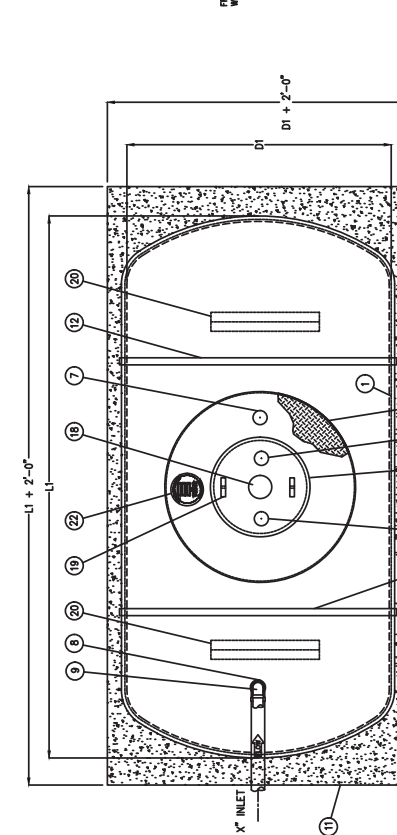
KEYED NOTES

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- 1" PUMP OUT PORT W/ GASKET ADAPTER
- 1" LEAK DETECTION MONITOR PORT W/ NEMA-7 BOX
- 1" LEAK DETECTION MONITOR PORT W/ NEMA-7 BOX
- 4" FPT INLET CONNECTION, DECONTAMINATION SHOWER FROM BUILDING
- 2" VENT TO BUILDING
- 1" PUMP OUT SUCTION TUBE
- 1" PRECAST CONCRETE BALLAST PAD
- 1" TANK HOLD DOWN STRAP (TYP-2)
- 1" LEVEL/LEAK DETECTION & CONTROL WIRING & 3/4" CONDUIT (BY OTHERS)
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- 1" 8" ALUMINUM WATER-TIGHT INSPECTION PORT
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- 1" CAST-IN SADDLES
- 1" NAMEPLATE INDICATING: MFG: PARKUSA, MODEL: DTF-XXX, DATE MANUFACTURED

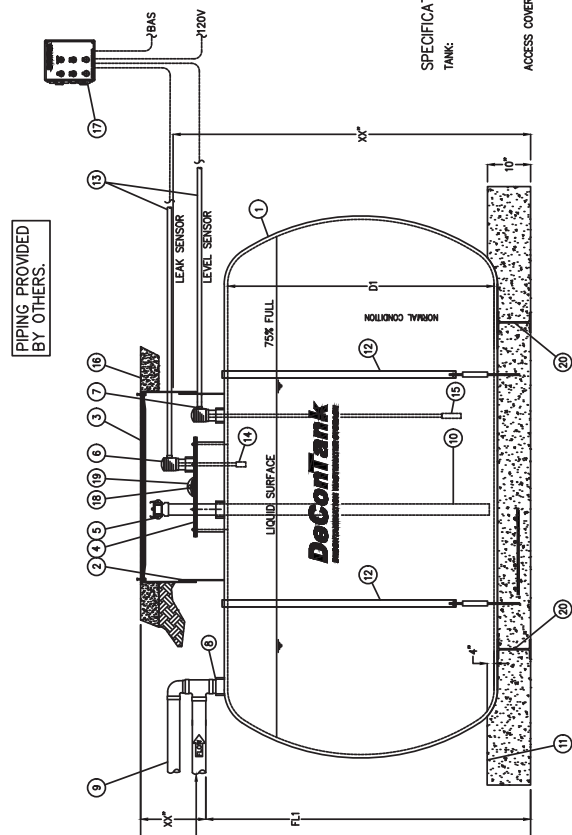
MODEL NO.	CAPACITY USGAL	EMPTY WT (LBS)	LENGTH LI	DIAMETER DI	INLET DI	PAD WEIGHT	TANK W/PAD WEIGHT
DTF-500	500	900	7'-0"	4'-0"	5'-5"	5,136	6,036
DTF-750	750	1,400	7'-3"	4'-0"	5'-0"	7,675	8,075
DTF-1000	1,000	2,100	11'-8"	4'-0"	5'-0"	10,563	12,663
DTF-1500	1,500	1,700	9'-0"	4'-0"	5'-0"	7,626	9,126
DTF-2000	2,000	2,000	10'-6"	4'-0"	5'-0"	9,735	11,435
DTF-2500	2,500	2,600	13'-9"	6'-0"	7'-0"	12,637	14,637
DTF-3000	3,000	2,100	16'-6"	8'-0"	7'-0"	15,103	17,703
DTF-4000	4,000	3,200	21'-0"	8'-0"	7'-0"	14,847	16,947
DTF-5000	5,000	3,200	26'-6"	8'-0"	7'-0"	15,539	18,739

DECONTAMINATION SCHEDULE

TYPICAL APPLICATIONS INCLUDE COMMERCIAL AND INDUSTRIAL WASTEWATER SERVICE WHERE THE WASTEWATER IS DETAILED FOR PERIODIC REMOVAL BY A VACUUM PUMP SERVICE. THE TANK IS DESIGNED TO BE FULLY BURIED BELOW GRADE FOR GRAVITY FLOW INLET.



PLAN VIEW



ELEVATION

DeContTank

DECONTAMINATION WASTEWATER STORAGE

DTF-1
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REV	DATE	BY	DESCRIPTION
A			

PROJECT:
 CUSTOMER:
 ENGINEER:
 ORDER # :
 DATE:
 PROJ. # :
 LOCATION:



www.parkusa.com 888-611-PARK
 DECONTAMINATION TANK
 DTF-1
 PM PC DRN ENG DWG. NO. DTF-1
 DATE 10/19
 REV. A

SPECIFICATIONS

TANK: THE TANK SHALL BE CONSTRUCTED FROM REINFORCED FIBERGLASS IN CONFORMANCE TO ASTM D3379. THE TANK SHALL BE ONE-PIECE BE CONSTRUCTION AT SHELL, END CAPS, AND BAFFLE.

ACCESS COVER: THE ACCESS COVER BE MINIMUM 48" DIAMETER AND BE CONSTRUCTED OF CARBON STEEL CONFORMING TO ASTM A516. THE COVER SHALL BE WELDED AFTER FABRICATION. THE COVER SHALL BE H20 TRAFFIC DUTY AND HAVE MARKINGS INDICATING "DECONTAMINATION HOLDING TANK".

ENGINEERING DATA: THE HOLDING TANK IS STRUCTURALLY & HYDRAULICALLY ENGINEERED TO CONFORM TO REGIONAL PLUMBING CODES RECOMMENDED IN MOST CITIES. CONSULT WITH LOCAL AUTHORITIES FOR SPECIFIC APPLICATION REQUIREMENTS.

SHOP DRAWINGS SHALL INCLUDE COMPLETE STRUCTURAL & BUDYANCY CALCULATIONS CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER UPON REQUEST. CONSULT WITH PARKUSA FOR CALCULATION DIMENSIONS & SHIPPING INFORMATION.

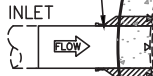
CUSTOMER TO PROVIDE GRADE TO FLOWLINE DIM



Wastewater Systems



RUBBER FLEXIBLE PIPE CONNECTION (TYP)

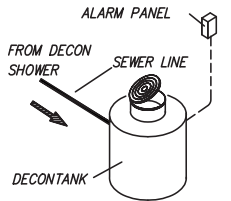


PARK MODEL DTB HIGH LEVEL NEMA 4X FRP ENCLOSURE WITH AUDIBLE & VISUAL ALARM (120V / 5 AMP) (MOUNTED BY OTHERS)



GENERAL INFORMATION

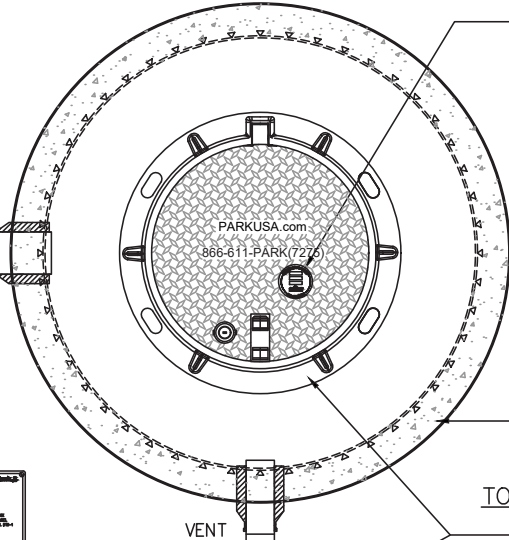
Emergency eye wash and shower stations are connected to a common drain piping. Wastewater from these stations may contain hazardous materials that should not be introduced into a private or sanitary sewer. A Park Decontank is recommended to detain this wastewater until it is safely removed. Only certified & licensed wastewater disposal companies shall be used.



TYPICAL CONFIGURATION

APPLICATIONS

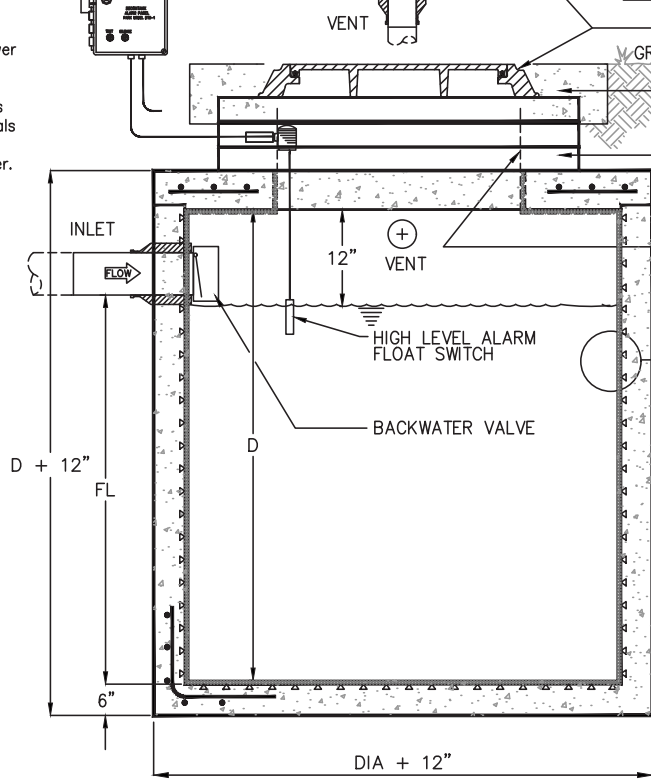
- HOSPITAL & LAB WASHDOWN
- EMERGENCY ROOM SHOWERS
- FIRE DEPARTMENTS
- CHEMICAL MANUFACTURERS
- HAZMAT TRAINING FACILITIES
- REMEDIATION WATER CLEANUP



NAMEPLATE INDICATING:
MFG: PARKUSA
888-611-PARK
www.ParkUSA.com
MODEL: DTX
DATE MANUFACTURED

SIZING TABLE						
MODEL	GAL	DIA	D	FL	WT lbs.	
DTX-500	500	60"	54"	42"	10,100	
DTX-600	600	60"	60"	48"	10,800	
DTX-700	700	60"	66"	54"	11,400	
DTX-800	800	72"	58"	46"	13,200	
DTX-900	900	72"	64"	52"	14,000	
DTX-1000	1,000	72"	68"	56"	14,500	
DTX-1200	1,200	84"	62"	50"	18,000	
DTX-1500	1,500	96"	60"	48"	19,600	
DTX-2000	2,000	96"	74"	62"	21,900	
DTX-2500	2,500	96"	88"	76"	24,200	

TOP VIEW



PRECAST CONCRETE OUTER SHELL BE MONOLITHIC CONSTRUCTION NO JOINTS BELOW WATER LEVEL

24" DIA. DUCTILE IRON RING/COVER BOLT-DOWN WITH S.S. BOLTS.

CONCRETE APRON (BY OTHERS)

CONCRETE EXTENSION TO BE USED TO RAISE TO GRADE LEVEL.

NON-WETTED INTERIOR OF TANK TO BE COATED w/ FRP LINER

INTERIOR OF TANK SHALL BE LINED WITH ONE OF THE FOLLOWING:

- o HIGH DENSITY POLYETHYLENE LINER 3/16" THICK -PE
- o 304 STAINLESS STEEL LINER 1/8" THICK -SS

EXTERIOR OF TANK TO BE COATED WITH BITUMASTIC VAPOR BARRIER

ELEVATION



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Specifications

- CONCRETE:** Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
- REINFORCEMENT:** Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal.
- ACCESS COVER:** The access cover be minimum 24" diameter and be constructed of ductile iron. The cover shall be lockable and be hinged with a safety blocking system. The cover shall be H20 traffic duty and have markings indicating "Decontamination Holding Tank".

Engineering Data

The holding tank & risers are structurally and hydraulically engineered conforming to ASTM 478-C. Refer to Sizing Table for capacity.

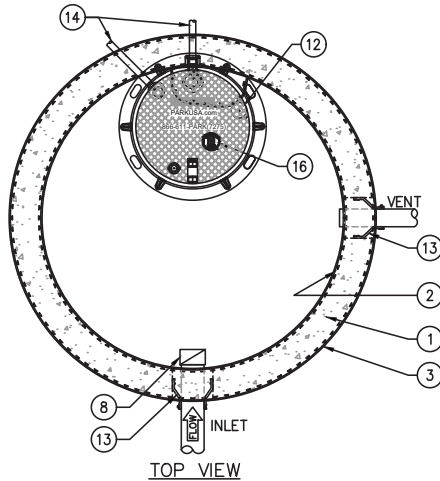
Field excavation and preparation shall be completed prior to delivery of interceptor. Use dimensional data as shown.

PROJECT:	
CUSTOMER:	
ORDER #:	PROJ #:
DATE:	LOCATION:



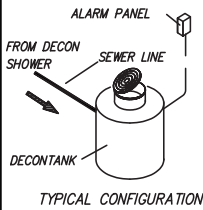
DECONTAMINATION TANK
SINGLE CONTAINMENT
MODEL DTX - 500 TO 2500 GALLONS

PM	DRN	ENG	DWG. NO.	REV.
DATE	2018		DTX-2	A



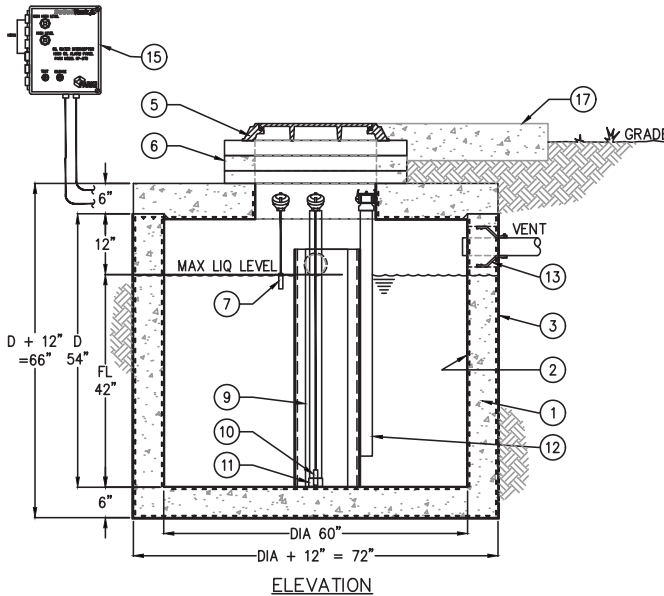
GENERAL INFORMATION

Emergency eye wash and shower stations are connected to a common drain piping. Wastewater from these stations may contain hazardous materials that should not be introduced into a private or sanitary sewer. A Park DeconTank is recommended to detain this wastewater until it is safely removed. Only certified & licensed wastewater disposal companies shall be used.



APPLICATIONS

- HOSPITAL & LAB WASHDOWN
- EMERGENCY ROOM SHOWERS
- FIRE DEPARTMENTS
- CHEMICAL MANUFACTURERS
- HAZMAT TRAINING FACILITIES
- REMEDIATION WATER CLEANUP



SIZING TABLE					
MODEL	GAL	DIA	D	FL	WT lbs.
DXC-500	500	60"	54"	42"	10,100
DXC-600	600	60"	60"	48"	10,800
DXC-700	700	60"	66"	54"	11,400
DXC-800	800	72"	58"	46"	13,200
DXC-900	900	72"	64"	52"	14,000
DXC-1000	1,000	72"	68"	56"	14,500
DXC-1200	1,200	84"	62"	50"	18,000
DXC-1500	1,500	96"	60"	48"	19,600
DXC-2000	2,000	96"	74"	62"	21,900
DXC-2500	2,500	96"	88"	76"	24,200

KEYED NOTES		
MARK	QTY	DESCRIPTION
1	1	PRECAST CONCRETE OUTER SHELL TO BE MONOLITHIC CONSTRUCTION. NO JOINTS BELOW WATER LEVEL
2	1	INTERIOR OF TANK SHALL BE LINED WITH 5mm THICK HIGH DENSITY POLYETHYLENE LINER
3	1	EXTERIOR OF TANK SHALL BE LINED WITH 5mm THICK HIGH DENSITY POLYETHYLENE LINER
4	-	NOT USED
5	1	24" DIA DUCTILE IRON RING & COVER, BOLT-DOWN w/ S.S. BOLTS
6	-	CONCRETE EXTENSION TO BE USED TO RAISE TO GRADE LEVEL
7	1	HIGH LEVEL ALARM FLOAT SWITCH (N.O.)
8	1	BACKWATER VALVE
9	1	LEAK DETECTION WELL (2" SCH 80 PVC PIPE)
10	1	LEAK DETECTION FLOAT SWITCH
11	1	2" HDPE HALF COUPLING WELDED TO BOTTOM
12	1	PUMP OUT PORT
13	2	RUBBER FLEXIBLE PIPE CONNECTION
14	2	2" CONDUIT
15	1	PARK MODEL DTB-GE HIGH LEVEL, HIGH LEVEL & LEAK DETECTION SYSTEM NEMA 4X FRP ENCLOSURE WITH AUDIBLE & VISUAL ALARM (120V/5 AMP) (MOUNTED BY OTHERS)
16	1	NAMEPLATE INDICATING: MFG: ParkUSA 888-611-PARK www.ParkUSA.com MODEL: DXC-500 DATE MANUFACTURED
17	1	CONCRETE APRON BY OTHERS

Wastewater Systems



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Specifications

CONCRETE: Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.

REINFORCEMENT: Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal.

ACCESS COVER: The access cover be minimum 24" diameter and be constructed of ductile iron. The cover shall be lockable and be hinged with a safety blocking system. The cover shall be H20 traffic duty and have markings indicating "Decontamination Holding Tank".

Engineering Data

The holding tank & risers are structurally and hydraulically engineered conforming to ASTM 478-C. Refer to Sizing Table for capacity.

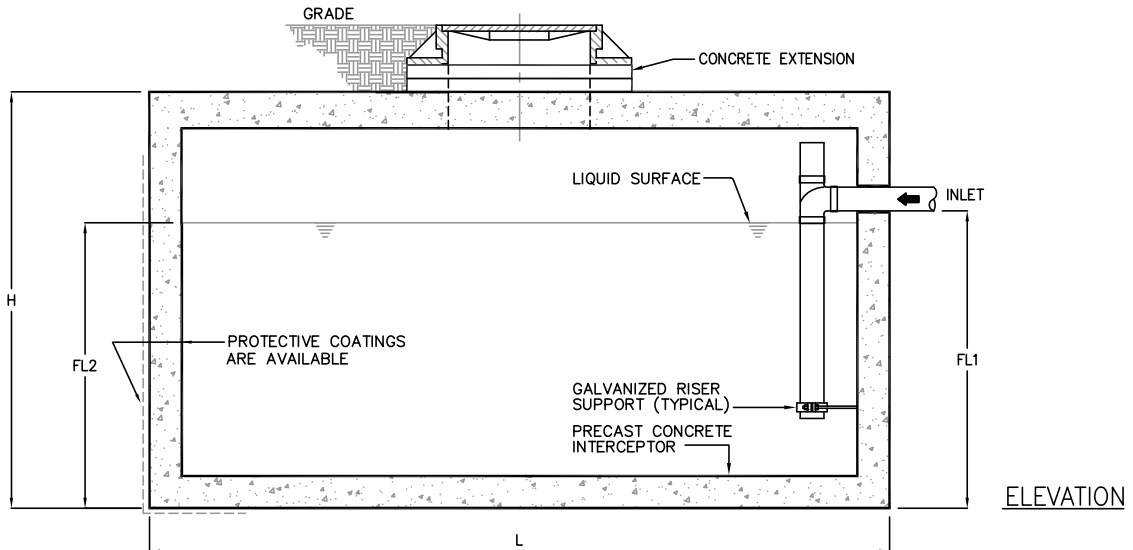
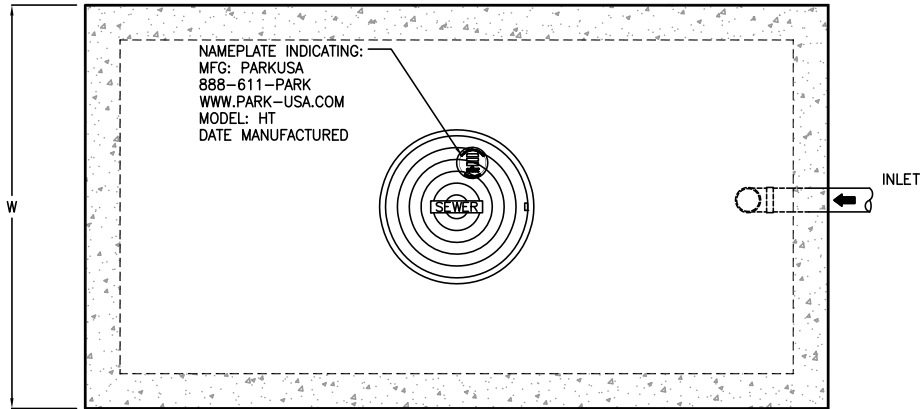
Field excavation and preparation shall be completed prior to delivery of interceptor. Use dimensional data as shown.

PROJECT:
CUSTOMER:
ENGINEER:
ORDER #:
PROJ #:
DATE:

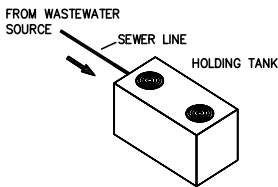


DUAL CONTAINMENT TANK – MODEL DXC
500 THRU 2500 GALLONS

PM	DRN	ENG	DWG. NO.	REV.
DATE	2018		DXC-1	A



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- OPTIONS:
- HIGH WATER ALARM
 - LADDERS OR STEPS
 - INTERIOR / EXTERIOR COATINGS
 - PUMPS & CONTROLS

TYPICAL APPLICATIONS INCLUDE COMMERCIAL AND INDUSTRIAL WASTEWATER SERVICE WHERE THE WASTEWATER IS DETAINED FOR PERIODIC REMOVAL BY A VACUUM PUMP SERVICE COMPANY. THE HOLDING TANK IS GENERALLY BURIED BELOW GRADE FOR GRAVITY FLOW INLET.

HOLDING TANK SCHEDULE							
MODEL NO.	CAPACITY USGal	EMPTY WT (LBS)	LENGTH L	WIDTH W	HEIGHT H	INLET FL1	DEPTH FL2
HT-500	500	9,500	7'-10"	4'-4"	4'-6"	3'-3"	3'-0"
HT-750	750	9,900	7'-10"	4'-4"	6'-0"	4'-5"	4'-2"
HT-1000	1,000	13,350	8'-8"	5'-0"	6'-0"	4'-9"	4'-6"
HT-1250	1,250	14,650	9'-2"	5'-8"	6'-0"	4'-9"	4'-6"
HT-1500	1,500	16,050	9'-2"	5'-8"	7'-0"	5'-9"	5'-6"
HT-2000	2,000	21,250	9'-0"	6'-0"	8'-0"	6'-9"	6'-6"
HT-2500	2,500	27,050	13'-0"	7'-0"	7'-0"	5'-9"	5'-6"
HT-3000	3,000	33,150	13'-0"	7'-0"	8'-0"	6'-9"	6'-6"
HT-3500	3,500	38,550	13'-0"	7'-0"	8'-6"	7'-3"	7'-0"
HT-4000	4,000	38,100	16'-0"	8'-6"	7'-0"	5'-9"	5'-6"

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION

SPECIFICATIONS

- CONCRETE : CLASS I/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR, FIRST STAGE OF WALL AND BAFFLE WITH SECTIONAL RISER TO REQUIRED DEPTH.
- REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS: MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30. MANHOLE SHALL BE NOMINAL 24 INCH DIAMETER AND BE TRAFFIC DUTY.

ENGINEERING DATA

THE HOLDING TANK IS STRUCTURALLY & HYDRAULICALLY ENGINEERED TO CONFORM TO REGIONAL PLUMBING CODES RECOMMENDED IN MOST CITIES. CONSULT WITH LOCAL AUTHORITIES FOR SPECIFIC APPLICATION REQUIREMENTS.

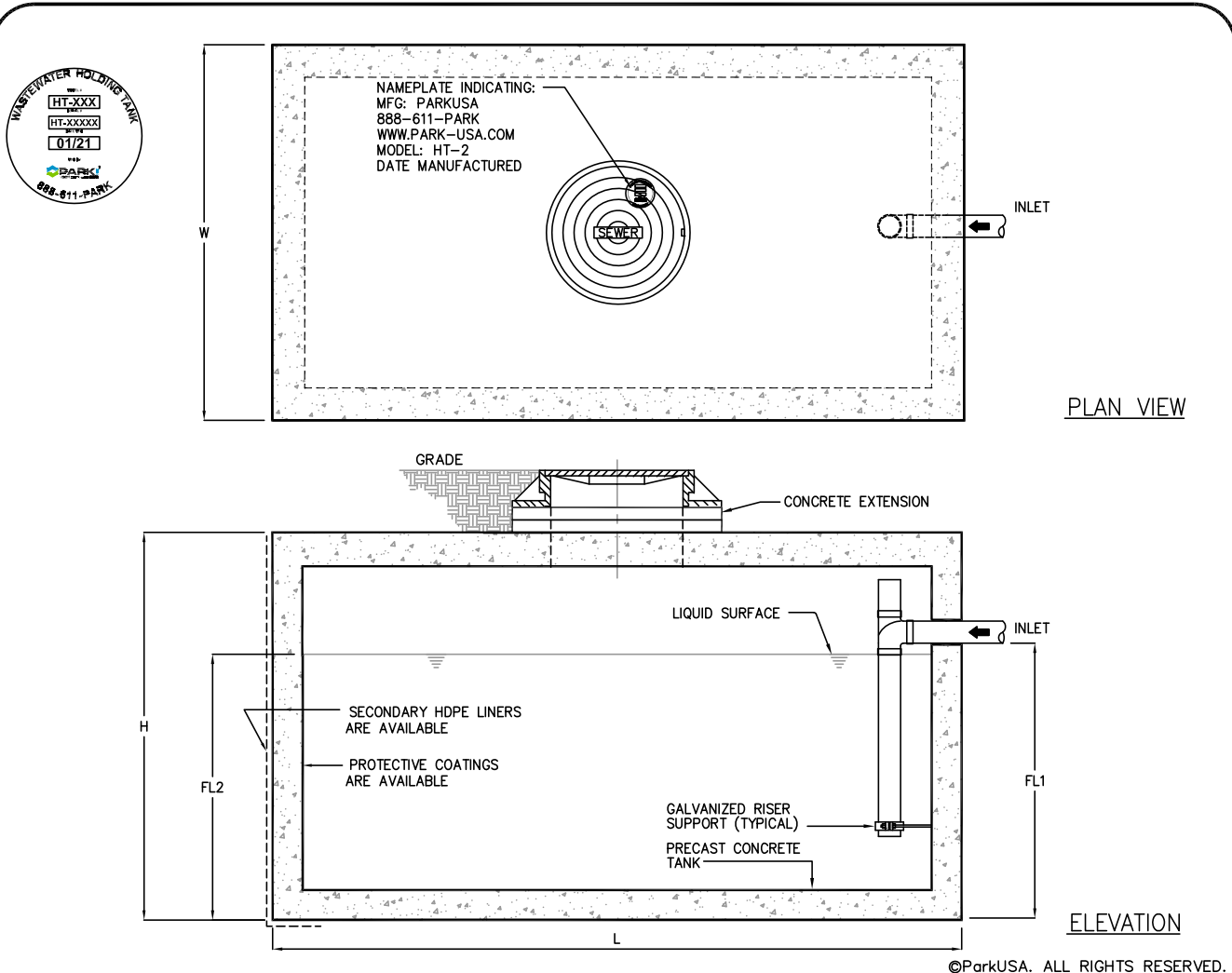
SHOP DRAWINGS SHALL INCLUDE COMPLETE STRUCTURAL & BOUYANCY CALCULATIONS CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER UPON REQUEST.

CONSULT WITH PARK EQUIPMENT COMPANY FOR EXACT EXCAVATION DIMENSIONS & SHIPPING INFORMATION.

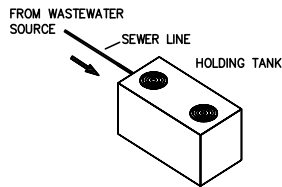


**HOLDING TANK SERIES HT
500 THRU 4000 GALLON CAPACITY**

PM	DRN	DWG. NO.	REV.
	CH		
DATE	11/13	HT-1	A



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- OPTIONS:
- HIGH WATER ALARM
 - LADDERS OR STEPS
 - INTERIOR / EXTERIOR COATINGS
 - PUMPS & CONTROLS

TYPICAL APPLICATIONS INCLUDE COMMERCIAL AND INDUSTRIAL WASTEWATER SERVICE WHERE THE WASTEWATER IS DETAINED FOR PERIODIC REMOVAL BY A VACUUM PUMP SERVICE COMPANY. THE HOLDING TANK IS GENERALLY BURIED BELOW GRADE FOR GRAVITY FLOW INLET.

SPECIFICATIONS

- CONCRETE :** CLASS 1/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR, FIRST STAGE OF WALL AND BAFFLE WITH SECTIONAL RISER TO REQUIRED DEPTH.
- REINFORCEMENT:** GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS:** MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30. MANHOLE SHALL BE NOMINAL 24 INCH DIAMETER AND BE TRAFFIC DUTY.

HOLDING TANK SCHEDULE						
MODEL NO.	EMPTY WT (LBS)	LENGTH L	WIDTH W	HEIGHT H	INLET FL1	DEPTH FL2
HT-5000	41,550	16'-0"	8'-6"	8'-0"	6'-9"	6'-6"
HT-6000	44,700	16'-0"	8'-6"	9'-0"	7'-9"	7'-6"
HT-7000	59,908	18'-0"	9'-0"	9'-2"	7'-11"	7'-8"
HT-8000	65,018	18'-0"	9'-0"	10'-0"	8'-9"	8'-6"
HT-9000	69,116	18'-0"	9'-0"	10'-10"	9'-7"	9'-4"
HT-10000	85,760	21'-2"	11'-2"	8'-8"	7'-5"	7'-2"
HT-11000	89,950	21'-2"	11'-2"	9'-6"	8'-3"	8'-0"
HT-12000	93,280	21'-2"	11'-2"	10'-0"	8'-9"	8'-6"
HT-13000	97,960	21'-2"	11'-2"	10'-6"	9'-3"	9'-0"
HT-14000	101,040	21'-2"	11'-2"	11'-2"	9'-11"	9'-8"
HT-15000	107,700	21'-2"	11'-2"	12'-2"	10'-11"	10'-8"

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION

ENGINEERING DATA

THE HOLDING TANK IS STRUCTURALLY & HYDRAULICALLY ENGINEERED TO CONFORM TO REGIONAL PLUMBING CODES RECOMMENDED IN MOST CITIES. CONSULT WITH LOCAL AUTHORITIES FOR SPECIFIC APPLICATION REQUIREMENTS.

SHOP DRAWINGS SHALL INCLUDE COMPLETE STRUCTURAL & BOUYANCY CALCULATIONS CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER UPON REQUEST

CONSULT WITH PARK EQUIPMENT COMPANY FOR EXACT EXCAVATION DIMENSIONS & SHIPPING INFORMATION.



**HOLDING TANK SERIES HT
5000 THRU 15000 GALLON CAPACITY**

PM	DRN	DWG. NO.	REV.
DATE	CH		
11/13		HT-2	A

HOW TO SPECIFY

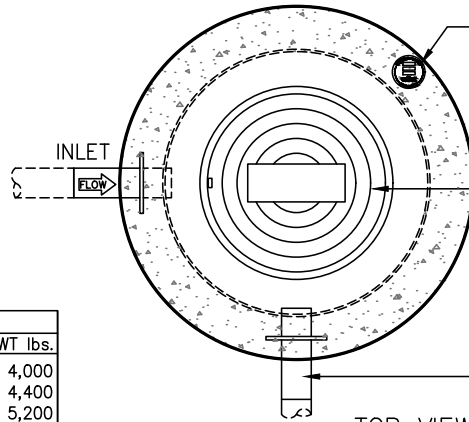
MODEL NUMBER: HTR

TANK SIZE (GAL)
50 - 50 GAL
100 - 100 GAL

500 - 500 GAL

INTERIOR LINER
P - PVC
P - POLYETHYLENE

SIZING TABLE					
MODEL	GAL	DIA	D	FL	WT lbs.
HTR-50	50	36"	32"	20"	4,000
HTR-100	100	36"	36"	24"	4,400
HTR-150	150	36"	48"	36"	5,200
HTR-200	200	36"	60"	48"	6,100
HTR-250	250	36"	72"	60"	6,900
HTR-300	300	48"	54"	42"	4,800
HTR-350	350	48"	60"	48"	5,400
HTR-400	400	48"	66"	54"	5,900
HTR-450	450	48"	72"	60"	6,400
HTR-500	500	60"	54"	42"	8,800



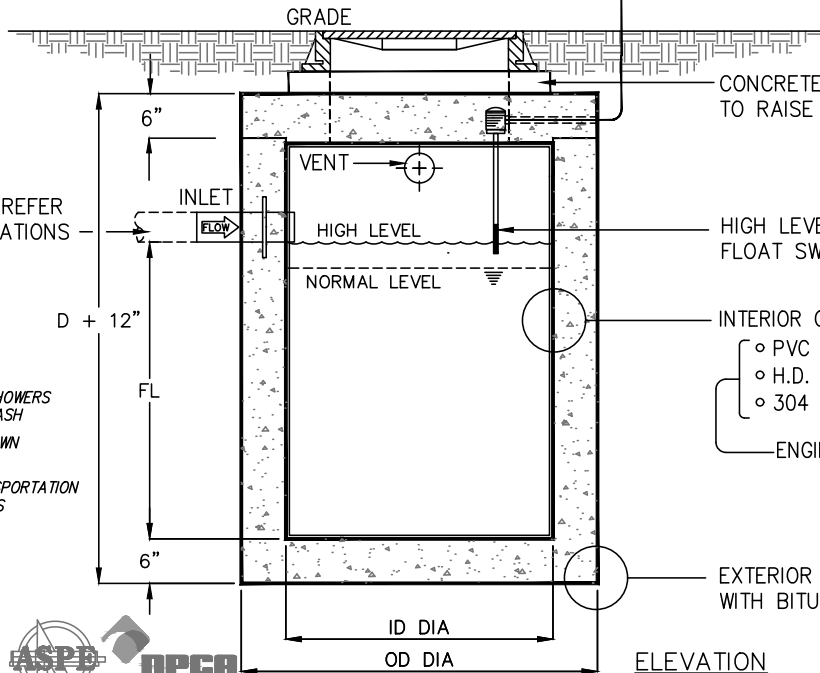
NAMEPLATE INDICATING:
MFG: PARKUSA
888-611-PARK
www.ParkUSA.com
MODEL: HTR
DATE MANUFACTURED

24" DIA. CAST IRON FRAME/COVER
BOLT-DOWN WITH S.S. BOLTS.

3" VENT PIPING, REFER TO PIPE SPECIFICATIONS

NEMA 4X FRP ENCLOSURE
WITH AUDIBLE & VISUAL
ALARM (120V / 5 AMP)
(MOUNTED BY OTHERS)

CABLE & CONDUIT
ROUTED TO ALARM
PANEL (BY OTHERS)



CONCRETE EXTENSION TO BE USED
TO RAISE TO GRADE LEVEL.

4" INLET PIPING, REFER
TO PIPE SPECIFICATIONS

HIGH LEVEL
FLOAT SWITCH (N.O.)

INTERIOR OF TANK SHALL BE LINED WITH:

- PVC LINING 70 MILS
- H.D. POLYETHYLENE 3/16" THK
- 304 STAINLESS STEEL 3/16" THK

 ENGINEER TO CHOOSE ONE

EXTERIOR OF TANK TO BE COATED
WITH BITUMASTIC VAPOR BARRIER

APPLICATIONS

- ◻ DECONTAMINATION SHOWERS & EMERGENCY EYEWASH
- ◻ HAZARDOUS WASHDOWN CONTAINMENT
- ◻ EQUIPMENT & TRANSPORTATION WASHDOWN FACILITIES
- ◻ REMEDIATION WATER CLEANUP



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Specifications

CONCRETE: Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.

REINFORCEMENT: Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal.

C.I. CASTINGS: Manhole frames, covers or grates are manufactured of grey cast iron conforming to ASTM A48-76 Class 30. Manhole shall have 24 inch inside diameter and be traffic duty.

Engineering Data

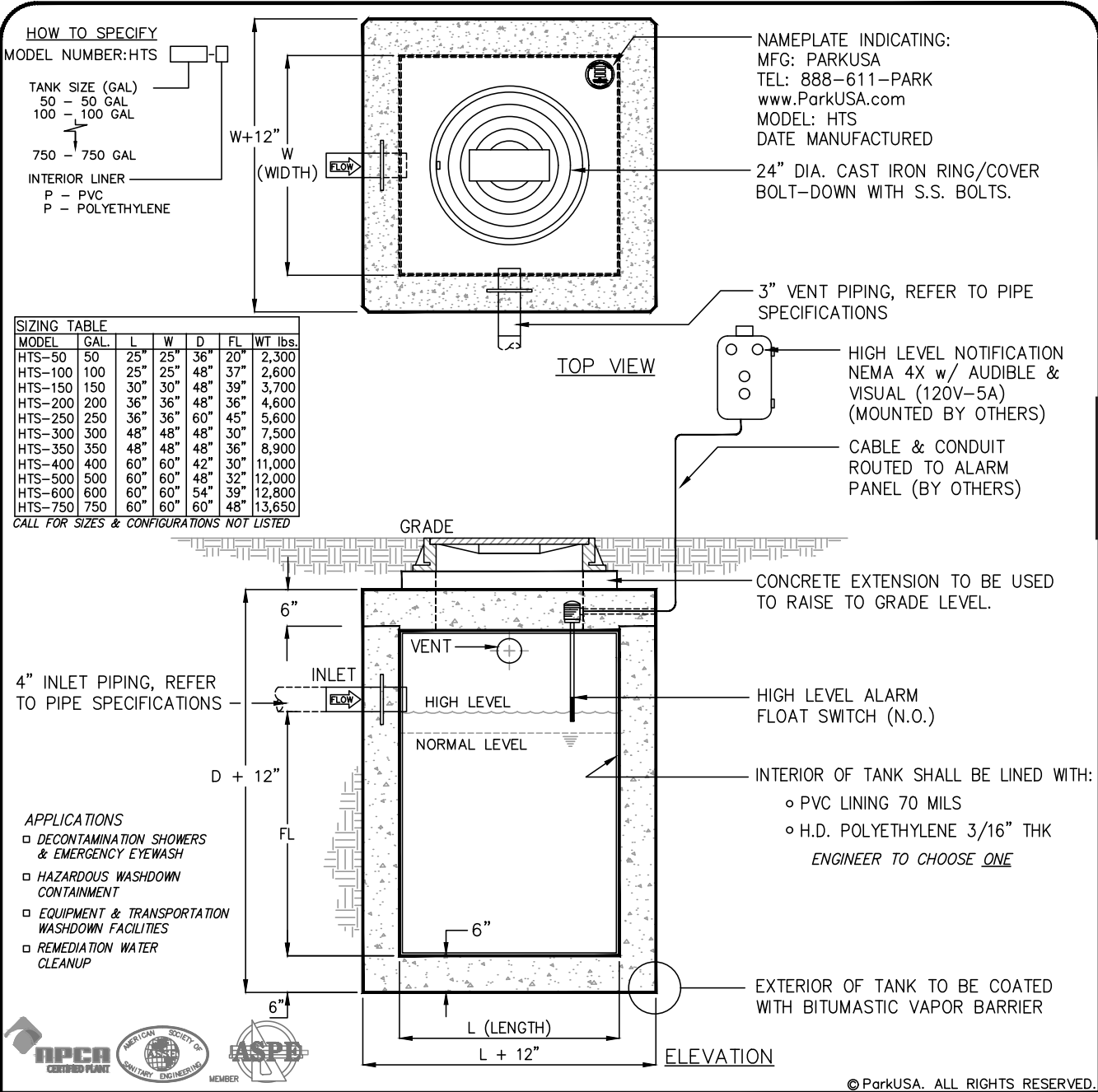
Neutralization tank is structurally and hydraulically engineered conforming to Uniform Plumbing Code. Refer to Sizing Table for capacity.

Field excavation and preparation shall be completed prior to delivery of interceptor. Use dimensional data as shown.

PROJECT:
CUSTOMER:
ENGINEER:
ORDER #:
PROJ #:
DATE:



HOLDING TANK				
MODEL HTR - SIZES 50 TO 750 GALLONS				
PM	ENG	DRN	DWG. NO.	REV.
DATE	2018	HTR-1		A



Wastewater Systems

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Specifications

CONCRETE: Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.


REINFORCEMENT: Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal.

C.I. CASTINGS: Manhole frames, covers or grates are manufactured of grey cast iron conforming to ASTM A48-76 Class 30. Manhole shall have 24 inch inside diameter and be traffic duty.

Engineering Data

Neutralization tank is structurally and hydraulically engineered conforming to Uniform Plumbing Code. Refer to Sizing Table for capacity.

Field excavation and preparation shall be completed prior to delivery of interceptor. Use dimensional data as shown.

PROJECT:				
CUSTOMER:				
ENGINEER:				
ORDER #:				
PROJ #:				
DATE:				
 888.611.PARK www.parkusa.com PARK USA DESIGN FOR WATER				
HOLDING TANK MODEL HTS - 50 TO 750 GALLONS				
PM	DRN	ENG	DWG. NO.	REV.
DATE	2018		HTS-1	A

Specifications

TANK: The tank shell shall be constructed from reinforced fiberglass in conformance to ASTM-D3299. Tank shall have one-piece be construction at shell, end caps.

C.I. CASTINGS: Manhole frames, covers or graties are manufactured of grey cast iron conforming to ASTM A48-76 Class 30. Manhole shall be nominal 24 inch diameter and be traffic duty.

CONCRETE: Class /II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor, first stage of wall and baffle with sectional riser to required depth.

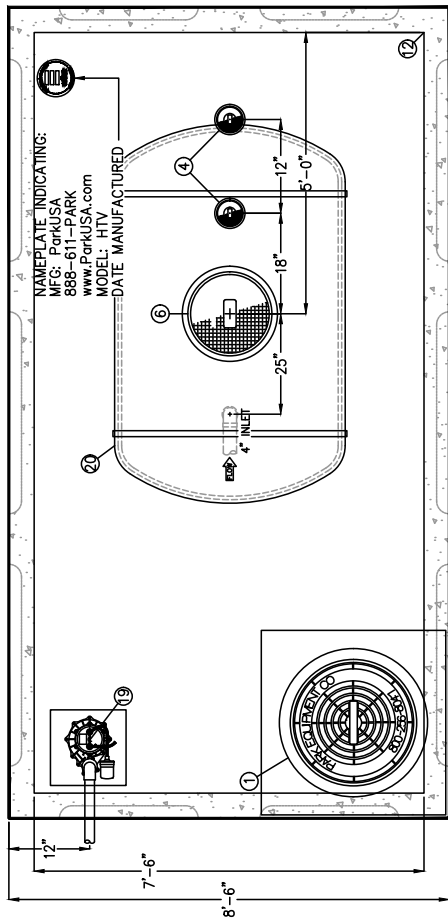
REINFORCEMENT: Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal.

Engineering Data

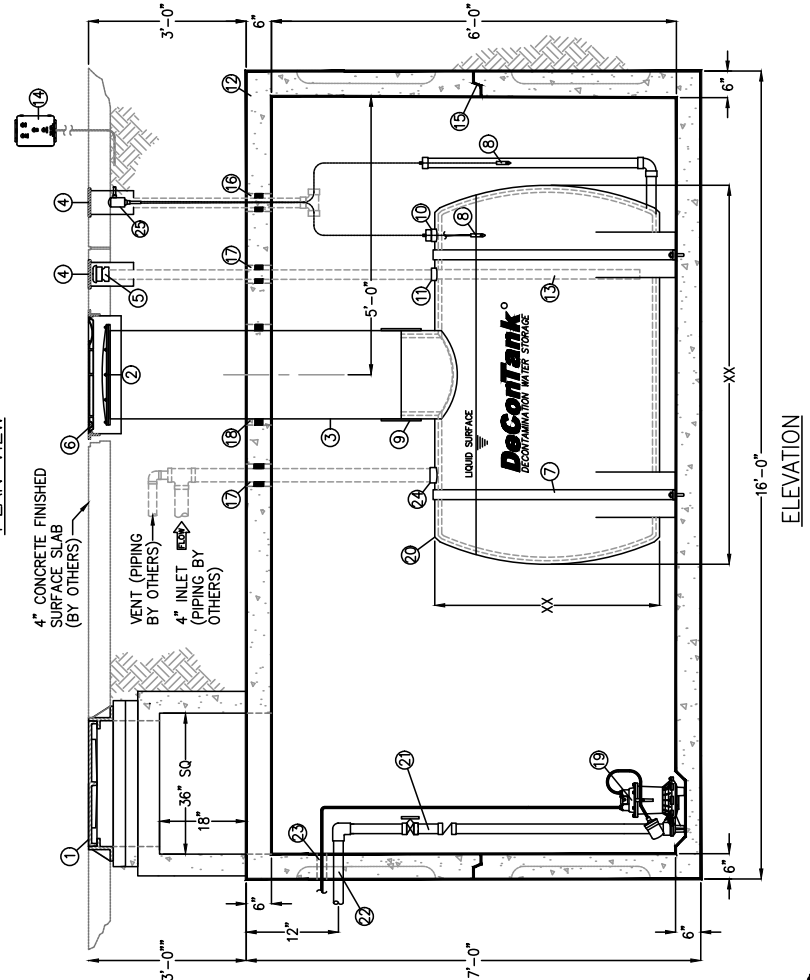
The holding tank is structurally & hydraulically engineered to conform to regional plumbing codes recommended in most cities. Consult with local authorities for specific application requirements. Consult with Park Equipment Company for exact excavation dimensions & shipping information.

KEY NOTES

- 1 32" DIA TRAFFIC DUTY DUCTILE IRON COVER. (SUPPLIED LOOSE)
- 2 18" DIA POLYETHYLENE COVER.
- 3 MANWAY EXTENSION AS REQUIRED
- 4 8" OPW 110 MANHOLE COVER CAP (SUPPLIED LOOSE)
- 5 4" CAMLOCK ADAPTER & CAP (SUPPLIED LOOSE)
- 6 22" OPW 110 MANHOLE COVER (SUPPLIED LOOSE)
- 7 TIE-DOWN STRAP
- 8 HIGH LEVEL SENSOR
- 9 NEOPRENE MANWAY CONNECTION
- 10 2"x1" DOUBLE TAP BUSHING
- 11 4"x2" DOUBLE TAP BUSHING
- 12 MODEL HT-4000 PRECAST CONCRETE VAULT
- 13 2" SUCTION PIPING (PVC)
- 14 HIGH LEVEL ALARM AND LEAK DETECTION PANEL
- 15 ALL JOINTS SEALED WATER-TIGHT W/ PLASTIC FLEXIBLE GASKET
- 16 3" SLEEVE FOR 1" PVC LINKSEAL LS300x4
- 17 6" SLEEVE FOR 4" PVC LINKSEAL LS300x10
- 18 24" SLEEVE FOR 20" NECK LINKSEAL 22pc X LS375
- 19 SUMP PUMP W/ INTEGRAL FLOAT FIBERGLASS/POLYETHYLENE HOLDING TANK
- 20 2" PVC DISCHARGE PIPING W/ CHECK VALVE AND BALL VALVE
- 21 4" SLEEVE FOR 2" PVC LINKSEAL LS300x6
- 22 1" PVC CONDUIT COUPLING FOR PUMP POWER (J-BOX BY ELEC)
- 23 4" BUNG (FFT)
- 24 FLOWLINE J-BOX



PLAN VIEW



ELEVATION

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PROJECT:	
CUSTOMER:	
ENGINEER:	
ORDER #:	
PROJ #:	
DATE:	

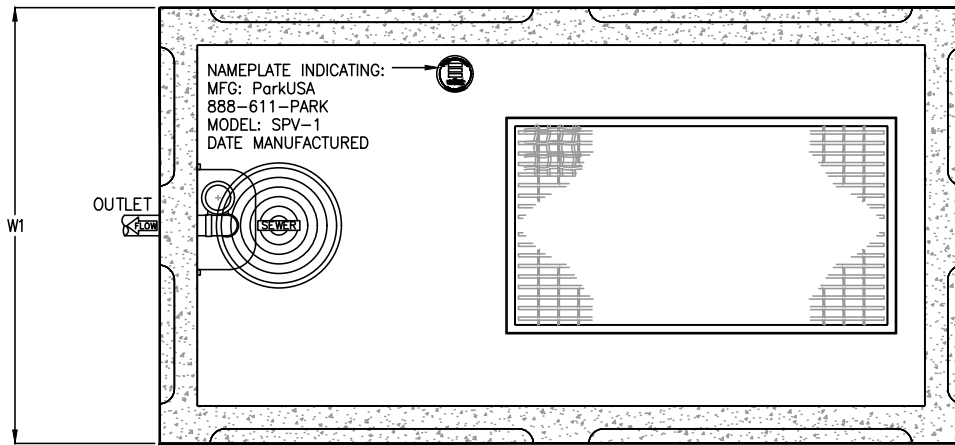
888-611-PARK
www.parkusa.com

PARK
DESIGN FOR WATER

VAULTED DECONTAMINATION TANK
W/ CONCRETE VAULT & HIGH WATER ALARM
MODEL HTV

PM	DRN	ENG	DWG. NO.	REV.
			HTV-1	A
DATE	2018			



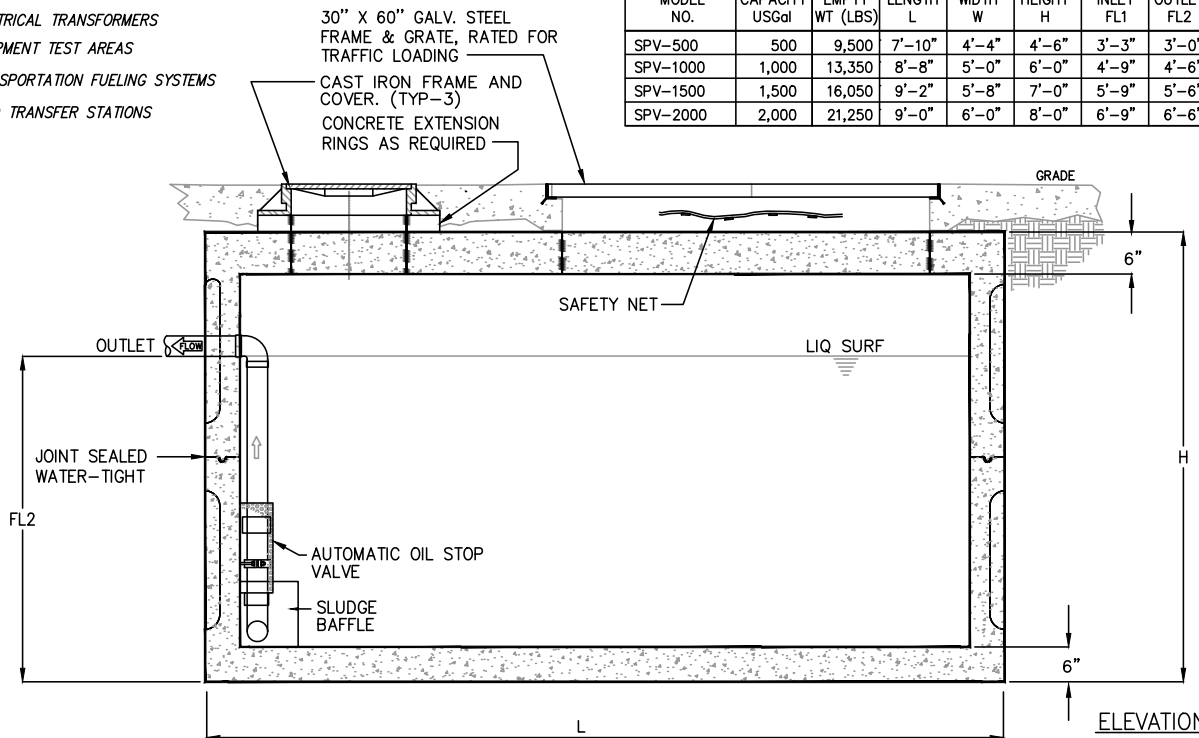


PLAN VIEW

APPLICATIONS WHERE SPILLS ARE POSSIBLE, BUT UNPREDICTABLE SUCH AS:

- OIL SPILL AREAS
- ELECTRICAL TRANSFORMERS
- EQUIPMENT TEST AREAS
- TRANSPORTATION FUELING SYSTEMS
- FLUID TRANSFER STATIONS

RECLAIM TANK SCHEDULE							
MODEL NO.	CAPACITY USGal	EMPTY WT (LBS)	LENGTH L	WIDTH W	HEIGHT H	INLET FL1	OUTLET FL2
SPV-500	500	9,500	7'-10"	4'-4"	4'-6"	3'-3"	3'-0"
SPV-1000	1,000	13,350	8'-8"	5'-0"	6'-0"	4'-9"	4'-6"
SPV-1500	1,500	16,050	9'-2"	5'-8"	7'-0"	5'-9"	5'-6"
SPV-2000	2,000	21,250	9'-0"	6'-0"	8'-0"	6'-9"	6'-6"



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Specifications

- CONCRETE:** Class I/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
- REINFORCEMENT:** Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal.
- C.I. CASTINGS:** Manhole frames, covers or grates are manufactured of grey cast iron conforming to ASTM A48-76 Class 35. Manhole shall have 24 inch inside diameter.

Engineering Data

Interceptor is structurally and hydraulically engineered conforming to Uniform Plumbing Code. Nominal capacity as indicated.

Field excavation and preparation shall be completed prior to delivery of interceptor. Use dimensional data as shown.

PROJECT: _____

CUSTOMER: _____

ENGINEER: _____

ORDER #: _____

PROJ #: _____

DATE: _____



SPILL PROTECTION VAULT
MODEL SPV - SIZES 500-2500 GALLONS

PM	DRN	ENG	DWG. NO.	REV.
DATE	2018		SPV-1	A

Wastewater Systems

DECONTANK KEYED NOTES

MARK QTY	DESCRIPTION
1	MONOLITHIC CONSTRUCTION. NO JOINTS BELOW WATER LEVEL.
2	PRIMARY TANK SHALL BE LINED WITH 3mm THICK HIGH DENSITY POLYETHYLENE LINER.
3	SECONDARY TANK SHALL BE LINED WITH 3mm THICK HIGH DENSITY POLYETHYLENE LINER.
4	INLET FROM RINSE DECON AREA
5	OUTLET TO SANITARY SEWER
6	VENT (ROTATED FOR CLARITY)
7	HIGH LEVEL ALARM FLOAT SWITCH (N.O.)
8	BACKWATER VALVE
9	LEAK DETECTION WELL (2" SCH 80 PVC PIPE)
10	LEAK DETECTION FLOAT SWITCH
11	1/2" HDPE HALF COUPLING WELDED TO BOTTOM
12	PUMP OUT PORT W/ CAMLOCK (AUV)
13	RUBBER FLEXIBLE PIPE CONNECTION
14	CONDUIT
15	DECONTANK MANAGEMENT PANEL WITH 50%/100% DISCHARGE PUMP. LEAK SWITCH. ACTIVATION OF DISCHARGE PUMP. NEMA-4X ENCLOSURE. REMOTE NURSE STATION ALERT
16	ALUMINUM PEDestal FOR CONTROL PANEL
17	NAMEPLATE INDICATING: MODEL, DTC-PSV-1000, 888-611-PARK, www.ParkUSA.com
18	CONCRETE ABRON BY OTHERS
19	24" DIA DUCTILE IRON RING & COVER, BOLT-DOWN W/ 5.5 S.S. BOLTS
20	CONCRETE EXTENSION TO BE USED TO RAISE TO GRADE LEVEL
21	DISCHARGE VALVE
22	DISCHARGE VALVE STEM
23	CAST IRON VALVE BOX

PUMP SYSTEM KEYED NOTES

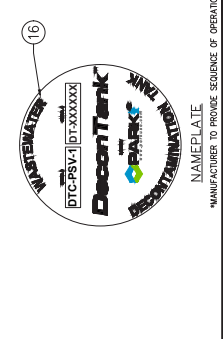
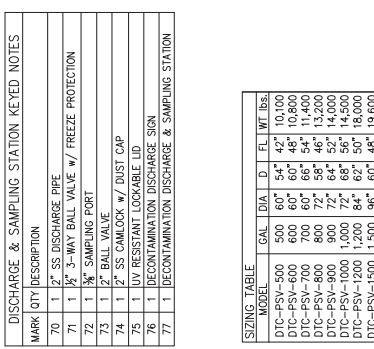
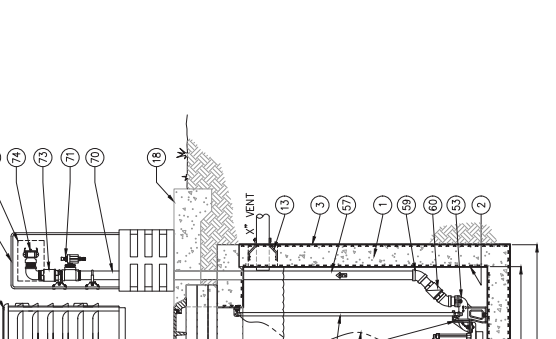
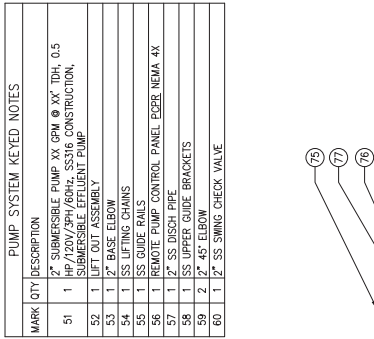
MARK QTY	DESCRIPTION
51	2" SUBMERSIBLE PUMP XX GPM @ XX' TDH, 0.5 HP/720V/3PH/60HZ, S316 CONSTRUCTION, REMOTE CONTROL PUMP
52	1/2" BALL VALVE
53	1" BASE ELBOW
54	1" SS LIFTING CHAINS
55	1" SS GUIDE RAILS
56	REMOTE PUMP CONTROL PANEL PER NEMA 4X
57	1" 2" SS DISCH PIPE
58	1" 2" SS UPPER GUIDE BRACKETS
59	2" 2" 45° ELBOW
60	1" 2" SS SWING CHECK VALVE

DISCHARGE & SAMPLING STATION KEYED NOTES

MARK QTY	DESCRIPTION
70	1" 2" SS DISCHARGE PIPE
71	1" 3-WAY BALL VALVE W/ FREEZE PROTECTION
72	1" SAMPLING PORT
73	1" BALL VALVE
74	1" 2" SS CAMLOCK W/ DUST CAP
75	1" UV RESISTANT LOCKABLE LID
76	1" DECONTAMINATION DISCHARGE SIGN
77	1" DECONTAMINATION DISCHARGE & SAMPLING STATION

SIZING TABLE

MODEL	GAL	DIA	D	FL	WT. LBS.
DTC-PSV-500	500	60"	54"	42"	10,100
DTC-PSV-600	600	60"	60"	48"	10,800
DTC-PSV-700	700	60"	66"	54"	11,400
DTC-PSV-800	800	72"	64"	52"	14,000
DTC-PSV-1000	1,000	72"	68"	56"	14,500
DTC-PSV-1200	1,200	84"	62"	50"	18,000
DTC-PSV-1500	1,500	96"	60"	48"	19,600
DTC-PSV-2000	2,000	96"	74"	62"	21,900
DTC-PSV-2500	2,500	96"	88"	76"	24,200



GENERAL INFORMATION
Emergency eye wash and shower stations are connected to a wastewater from these stations may contain hazardous materials that should not be introduced into the sanitary sewer. A Park decontamination station is recommended to detain this wastewater until it is safely removed. Only certified & authorized personnel from the manufacturer shall be used.

ALARM PANEL
DISCHARGE SAMPLING STATION SHOWER
TO SANITARY SEWER
DECONTANK

TYPICAL CONFIGURATION
APPLICATIONS
 HOSPITAL & LAB WASHDOWN
 EMERGENCY ROOM SHOWERS
 FIRE DEPARTMENTS
 CHEMICAL MANUFACTURERS
 HAZMAT TRAINING FACILITIES
 REMEDIATION WATER CLEANUP

CONCRETE
CLASS 1/1 CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL. ACCESS COVER: THE ACCESS COVER BE MINIMUM 24" DIAMETER AND BE CONSTRUCTED OF DUCTILE IRON. THE COVER SHALL BE LOCKABLE AND BE HINGED WITH A SAFETY BLOCKING SYSTEM. THE COVER SHALL BE H20 TRAFFIC DUTY AND HAVE MARKINGS INDICATING "DECONTAMINATION HOLDING TANK".

ENGINEERING DATA
THE HOLDING TANK & RISERS ARE STRUCTURALLY AND HYDRAULICALLY ENGINEERED CONFORMING TO ASTM 478-C. REFER TO SIZING TABLE FOR CAPACITY. FIELD EXCAVATION AND PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF INTERCEPTOR. USE DIMENSIONAL DATA AS SHOWN.

CONCRETE
CLASS 1/1 CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL. ACCESS COVER: THE ACCESS COVER BE MINIMUM 24" DIAMETER AND BE CONSTRUCTED OF DUCTILE IRON. THE COVER SHALL BE LOCKABLE AND BE HINGED WITH A SAFETY BLOCKING SYSTEM. THE COVER SHALL BE H20 TRAFFIC DUTY AND HAVE MARKINGS INDICATING "DECONTAMINATION HOLDING TANK".

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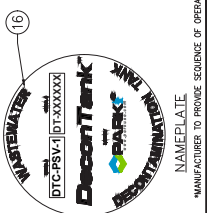


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REV	DATE	BY	DESCRIPTION
A			

PROJECT: _____
 DATE: _____
 CUSTOMER: _____
 ORDER #: _____
 ENGINEER: _____
 DATE: 04/28/2020
 LOCATION: _____
 PRON #: _____

PARK
 www.parkusa.com
 888-611-PARK
 DECONTAMINATION WASTEWATER SYSTEM
 DOUBLE WALL W/ PUMP DISCHARGE & SAMPLING STATION
 PM FC DRN ENG DWG. NO.
 DATE 04/20
 DTC-PSV-1
 REV. A



CONDUIT/WIRE LEGEND

MARK	DESCRIPTION	CONDUIT/WIRE	ELECT	WIRE SIZE	CONDUIT SIZE
BAS	BUILDING AUTOMATION SYSTEM	120 WAC	(3) 16GA	1"	1"
DIL	DECONTANK LEVEL	120 WAC	(3) 16GA	3/4"	3/4"
OPP	CONTROL PANEL POWER	120 WAC	(3) 12GA	1"	1"
TIP	TRANSFER PUMP POWER	120 WAC	(3) 12GA	1"	1"

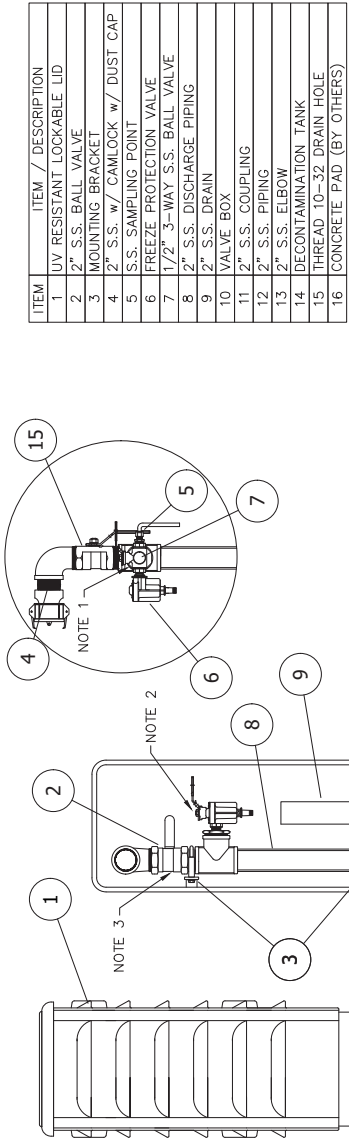
NOTE: ALL WIRING/ CONDUIT SIZES ARE SUBJECT TO NEC AND ALL OTHER CODES



#SS-02 DECONTAMINATION TANK SAMPLING STATION

Multiple purpose freeze proof blow-off and sampling device shall be installed in the following locations:

- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____



ITEM	ITEM / DESCRIPTION
1	UV RESISTANT LOCKABLE LID
2	2" S.S. BALL VALVE
3	MOUNTING BRACKET
4	2" S.S. w/ CAMLOCK w/ DUST CAP
5	S.S. SAMPLING POINT
6	FREEZE PROTECTION VALVE
7	1/2" 3-WAY S.S. BALL VALVE
8	2" S.S. DISCHARGE PIPING
9	2" S.S. DRAIN
10	VALVE BOX
11	2" S.S. COUPLING
12	2" S.S. PIPING
13	2" S.S. ELBOW
14	DECONTAMINATION TANK
15	THREAD 10-32 DRAIN HOLE
16	CONCRETE PAD (BY OTHERS)

LAYOUT NOTES:

- 1.) 3-WAY SAMPLING VALVE SHOWN IN THE FREEZE PROTECTION POSITION.
 - 2.) 3-WAY SAMPLING VALVE SHOWN IN THE SAMPLING POSITION.
 - 3.) MAIN 2" BLOW-OFF VALVE SHOWN IN THE FREEZE PROTECTION POSITION.
- THE EXACT AMOUNT OF WATER DISPENSED DEPENDS ON AMBIENT AIR TEMPERATURE, MAKE UP WATER TEMPERATURE, AND DURATION OF COLD SPELL.



REV.	DATE	BY	DESCRIPTION
A			
PROJECT:			
ENGINEER:			
ORDER #			
DATE: 04/28/2020		PROJ. #	
DATE: 04/28/2020		LOCATION:	
PARK			
www.parkusa.com		888-611-PARK	
DECONTAMINATION WASTEWATER SYSTEM			
PUMP DISCHARGE & SAMPLING STATION			
PM	PC	DRN	ENG
DWG. NO.	REV.	DATE	DATE
		SS-02	A

The DeconTank #SS-02 Decontamination Tank Sampling Station shall be freeze proof and standard surface mount, with a 2" MIP inlet and a 2" NPT threaded discharge. A 2" Stainless Steel T shall be located before the discharge to allow for sampling. A 2" Stainless Steel Ball Valve shall control the flow of water for the main discharge. The unit shall be fully enclosed in a UV resistant lockable cover and when opened, the station shall require no key for operation. All water flow must be thru Stainless Steel and all operational parts shall be serviceable from above ground without any digging. A temperature activated water relief valve shall maintain a controlled water temperature within the waterway by opening the valve port when the water temperature reaches 43°F and remain open until warmer water reaches the port, thus creating a non freezing environment. The freeze proof cycle shall repeat as often as necessary to prevent freezing.

NOTE: Operational parts may freeze if the temperature drops below 32°F for any extended duration.

Unit model # shall be #SS-02 as provided by www.ParkUSA.com, or approved equal.

NOTE: Flush water lines free of debris before installation

Features

- Double-wall tank with leak detection
- Direct-bury and aboveground models
- Sizes from 50 to 10,000 gallons
- Control system with high-level leak detection
- Watertight, pressure, and traffic duty access covers
- Easy installation and maintenance
- Non-porous surfaces for easy cleaning
- Lifetime warranty

Options

- Sampling stations
- Discharge pump
- Pump ports
- Discharge sewer valve
- Remote nurse station alarm
- HEPA vent filtration

Hazardous Materials

- C** - Chemical
- B** - Biological
- R** - Radiological
- N** - Nuclear
- E** - Explosive



WW | **DECONTANK**
Standard



Model DTA
Alarm System

Model DTC

Decontamination Wastewater Management System

The ParkUSA® DeConTank® is designed to hold or store wastewater generated from decontamination rinse activities in medical facilities. Harmful CBRNE substances are prevented from entering sanitary and/or combined sewer systems (chemical, biological, radiological, nuclear, or explosive).

A disaster event requiring decontamination, regardless of cause (human or natural disaster), it is imperative that medical facilities are equipped to receive, decontaminate and treat community members who may have been exposed to CBRNE materials and are seeking treatment.

The ParkUSA DeCon tank system is engineered to protect sewer systems, medical staff, and patients, by intercepting and storing hazardous wastewater discharge from decontamination rinse shower and rinsing activities.

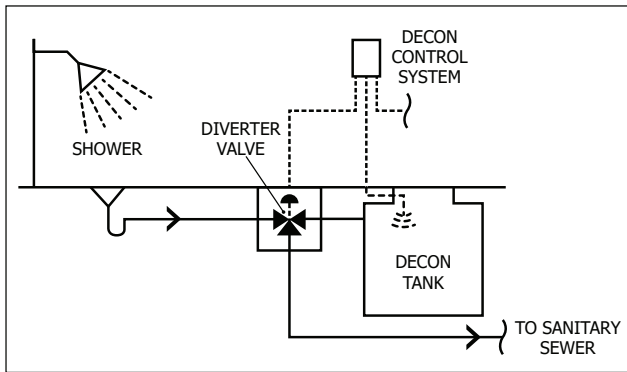
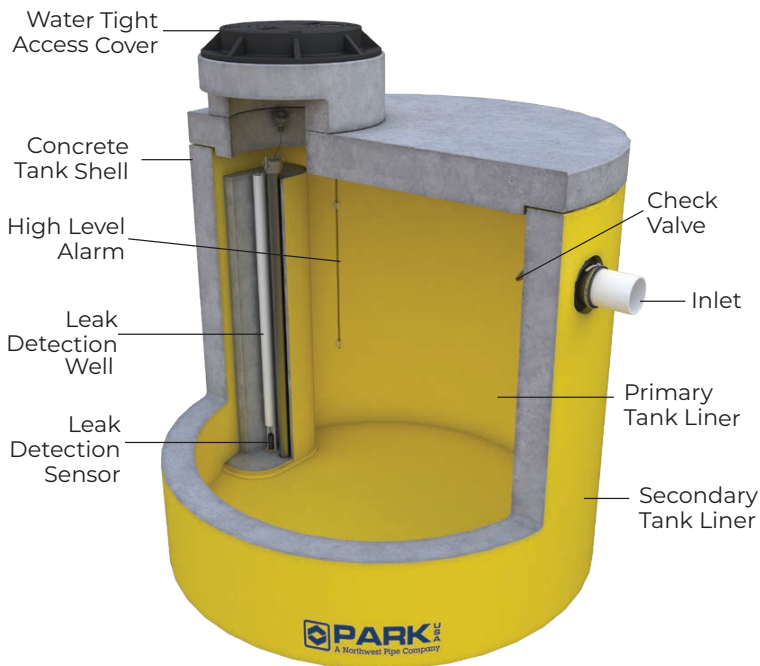


FIGURE 1: TYPICAL DIVERTER SCHEMATIC

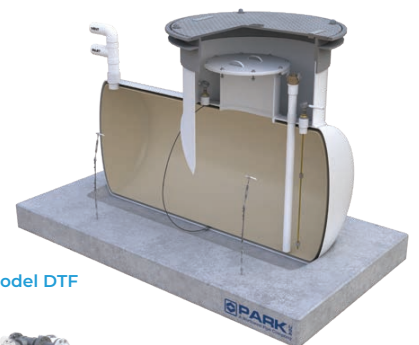
How it Works

The ParkUSA® DeConTank® is designed to hold or store specific volumes of contaminated wastewater. The interior liner is designed to protect the tank from corrosion and degradation. Assessment of waste disposal is needed to comply with most guidelines.

Visit decontank.parkusa.com for more information and design assistance.

To request a quote or catalog, visit request.parkusa.com.

Other Models Include:



APPLICATIONS





Fire Fighting Foam Containment



PARK
USA
A Northwest Pipe Company

**ENGINEERING
FACTS**

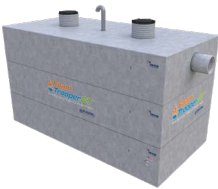
GENERAL INFORMATION

Aqueous film-forming foam (AFFF) solution is used extensively in fire suppression systems for aviation facilities and fire training facilities. AFFF systems are proven and essential to protect these valuable, mission essential aircraft and hangar facilities. AFFF systems have superior fire extinguishing capability and can effectively control flammable or combustible liquid fire resulting from aviation and shipboard accidents.

The ParkUSA AFFF unit is a product designed to hold and ease application of AFFF solution. Due to its capabilities in fire suppression, the use of this tank is useful for fire protection projects.

AFFF is not considered hazardous to humans and is technically considered biodegradable and practically nontoxic. The major concern is the large volume of solution that can be produced from hangar fire protection systems. Because AFFF is biodegradable, the breakdown of AFFF by bacteria consumes oxygen. Uncontrolled AFFF discharged to the environment could deprive aquatic life of oxygen and cause fish kills.

AF3 TANK MODELS



AFFF-C Series



ParkUSA AFF-S Series



ParkUSA AFFF-F Series

If allowed to enter the sewage treatment facilities in relatively large volumes, AFFF foam can disrupt the treatment process by killing necessary bacterial cultures within wastewater treatment facilities (WWTFs). Many WWTF's prohibit the discharge of AFFF laden wastewater unless the AFFF concentration is less than 50 ppm.

MODELS

There are currently two models available for the ParkUSA AFFF unit, these configurations are given by the material of construction:

The ParkUSA AFFF-C Series is manufactured of Class II 4500 PSI precast concrete. Pre-casting the concrete shell insures that all units achieve structural and physical uniformity. The units are structurally engineered for H-20 truck loading and can be buried without any need for any other structural protection. The unit is of monolithic construction at bottom and walls to insure against joint leakage.

The ParkUSA AFF-S Series is of ¼-inch thick ASTM A36 carbon steel. All welding is performed in accordance to American Welding Society D1.1 standards. The inlet, outlet, vent, and drain connections shall be standard duty Class 150 PSI. Interceptor shall have lifting lugs, gasketed access covers, site glass, makeup water valve port, and support beams. The unit shall be coated inside and outside with a fire retardant and corrosion resistant coating system. The coalescing media pack is of modular construction for easy maintenance and constructed of noncorrosive materials.

The ParkUSA AFFF-F Series is manufactured fiberglass or plastic and is used where lightweight construction is required.

Aqueous film-forming foam (AFFF) solution is used extensively in fire suppression systems for aviation facilities and fire training facilities.

FEATURES

- Sizes Ranging From 500 - 20,000 Gallons
- OSHA Manway Access Cover
- Chemical Resistant Tank Construction
- Prepackaged System for Easy Specification & Installation
- Maintenance Notification System; Alerts of Tank Full Capacity
- Optional Dual Wall Containment
- Optional Metering Pump & Controls

SYSTEM COMPONENTS

The ParkUSA AFFF unit includes the following standard & optional components:

- Elevated Stands & Ladders
- Dual Wall Construction
- Stainless Steel Construction
- Concrete Containment Vault
- High Level Monitoring Sensors & Controls
- Precast Concrete, Steel or Fiberglass Construction
- Access covers or hatchways
- Safety hatch nets

OPERATION

For years, foam has been used as a fire-extinguishing medium for flammable and combustible liquids. Unlike other extinguishing agents - water, dry chemical, CO₂, etc., a stable aqueous foam can extinguish a flammable or combustible liquid fire by the combined mechanisms of cooling, separating the flame/ignition source from the product surface, suppressing vapors and smothering. It can also secure for extended periods of time against reflash or re-ignition. Water, if used on a standard hydrocarbon fuel, is heavier than most of those liquids and if applied directly to the fuel surface, will sink to the bottom having little or no effect on extinguishment or vapor suppression. If the liquid fuel heats above 212 degrees Fahrenheit, the water may boil below the fuel surface throwing the fuel out of the contained area and spreading the fire. For this reason, foam is the primary fire-extinguishing agent for all potential hazards or areas where flammable liquids are transported, processed, stored or used as an energy source.

DESIGN CONSIDERATIONS

When designing an AFFF unit for any application, there are some variable to take in consideration. First are the characteristics of the application, it is needed to be stated if the project is for firewater, and the location of the project and the tank. In the same way, all applicable guidelines and codes for the project and location must be reviewed.

SIZING

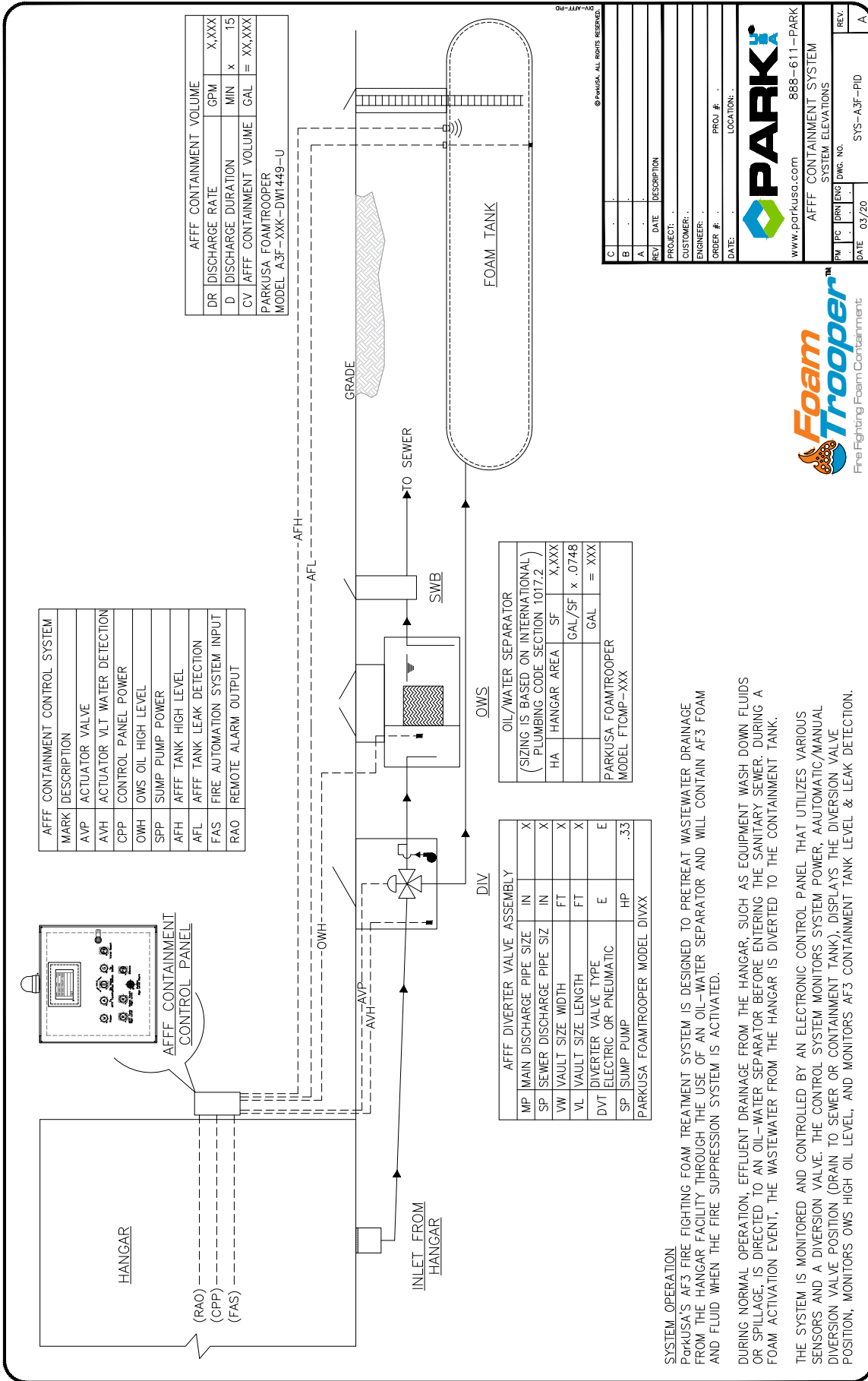
Since this is a special product that requires coordination and careful review of different variables involved, it results complex to establish a standard chart with model and size. However, the general method for sizing this type of unit is as follows:

- Variables of flow, foam, and location must be stated. These values usually are: flow rate, hanger size, volume of foam solution, and foam expansion rate.
- Using a 10 minutes retention, and with the discharge equation, the volume of the tank can be estimated.
- Next, wastewater equipment to use should be verified, this includes: double wall with leak detection, oil/water separator, diverter valve actuator, and control panel. Each of these pieces and equipment also need a process for design and selection.

MAINTENANCE

The AFFF unit should be inspected periodically for any accumulation that could occur during normal operation. In the unfortunate event of spill, the unit should immediately be serviced to remove hazardous material.

When necessary, the unit should be pumped out by a licensed pumping company familiar with regulations regarding proper disposal.



SYSTEM OPERATION

ParkUSA's AF3 FIRE FIGHTING FOAM TREATMENT SYSTEM IS DESIGNED TO PRETREAT WASTEWATER DRAINAGE FROM THE HANGAR FACILITY THROUGH THE USE OF AN OIL-WATER SEPARATOR AND WILL CONTAIN AF3 FOAM AND FLUID WHEN THE FIRE SUPPRESSION SYSTEM IS ACTIVATED.

DURING NORMAL OPERATION, EFFLUENT DRAINAGE FROM THE HANGAR, SUCH AS EQUIPMENT WASH DOWN FLUIDS OR SPILLAGE, IS DIRECTED TO AN OIL-WATER SEPARATOR BEFORE ENTERING THE SANITARY SEWER. DURING A FOAM ACTIVATION EVENT, THE WASTEWATER FROM THE HANGAR IS DIVERTED TO THE CONTAINMENT TANK.

THE SYSTEM IS MONITORED AND CONTROLLED BY AN ELECTRONIC CONTROL PANEL THAT UTILIZES VARIOUS SENSORS AND A DIVERSION VALVE. THE CONTROL SYSTEM MONITORS SYSTEM POWER, AUTOMATIC/MANUAL DIVERSION VALVE POSITION (DRAIN TO SEWER OR CONTAINMENT TANK), DISPLAYS THE DIVERSION VALVE POSITION, MONITORS OWS HIGH OIL LEVEL, AND MONITORS AF3 CONTAINMENT TANK LEVEL & LEAK DETECTION.

**Wastewater
Systems**



AVOID PFAS CONTAMINATION ENVIRONMENTALLY RESPONSIBLE

AFFF Containment System

Aqueous film-forming foam (AFFF) solution is used extensively in fire suppression systems for aviation facilities and in fire training. AFFF systems are proven and essential to protect these valuable, mission essential aircraft and hangar facilities. AFFF consists of fluorosurfactant (PFAS), hydrocarbon surfactants, solvents, inorganic salts, corrosion inhibitors, and water. The use of PFAS in foam enables the formation of an aqueous film on top of lighter liquid fuels.

This film is capable of rapid fire extinguishment, burn-back resistance and protection against vapor release. PFAS does not exist naturally in the environment, since they are man-made. First generation PFAS chemicals are very persistent in the environment and in the human body – meaning they don't break down and can accumulate over time. The US Department of Defense is currently in the process of testing for legacy PFAS contamination in hundreds of locations where the military has conducted fire or crash training.

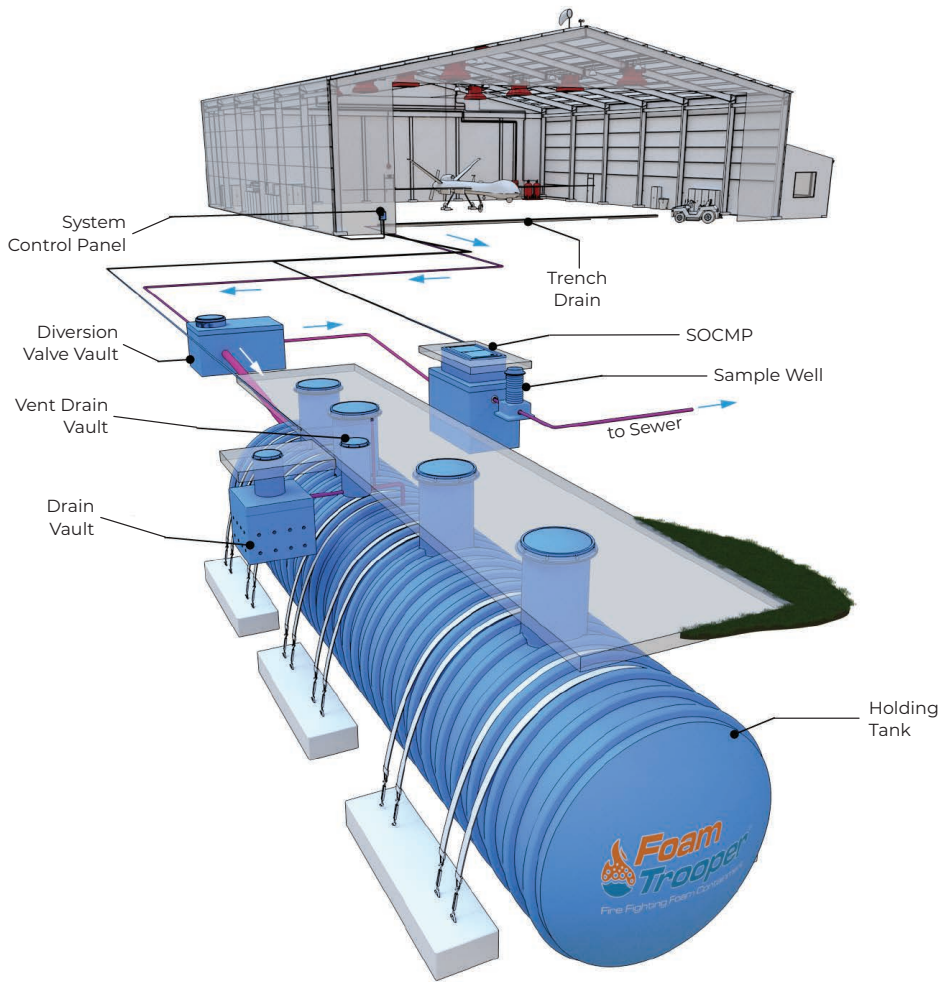
ParkUSA has developed the FoamTrooper for pretreatment and containment of wastewater discharge from fire protection systems. The FoamTrooper enables responsible management of discharge to protect the public sewer and the environment.

Features

- OSHA Manway Access Cover
- Chemical Resistant Tank Construction
- Prepackaged System for Easy Specification & Installation
- Maintenance Notification System; Alerts of Tank Full Capacity
- Optional Dual Wall Containment
- Optional Metering Pump & Controls



WW | FOAMTROOPER
Standard



How it Works

Under normal operations, wastewater discharge (due to wash and incidental spills) drains into the hangar floor drainage system. The wastewater is routed to an oil/water separator prior to discharging into the public sewer. In the event of a foam discharge (during system testing or a fire event), the wastewater is automatically diverted to the foam containment tank. This foam-laden wastewater is safely contained until proper disposal.

The FoamTrooper is a proven system to eliminate the environmental hazards of foam release.

Visit foamtrooper.parkusa.com for more information and design assistance.

To request a quote or catalog, visit request.parkusa.com.

Applications

- Heliports/Helidecks
- General Aviation
- Commercial
- Municipal
- Offshore/Marine

Background

New generation AFFF is generally non-hazardous and biodegradable according to the Interstate Technology Regulatory Council. However, the major concern is the large volume of foam solution that can be produced from hangar fire protection systems. Because AFFF is biodegradable the breakdown by bacteria consumes oxygen. Uncontrolled AFFF discharge to the environment can deprive aquatic life of oxygen and cause fish kills.

If allowed to enter wastewater treatment plants (WWTP) in large volumes, AFFF can disrupt the treatment process by killing necessary bacterial cultures within WWTPs. Many WWTPs prohibit the discharge of AFFF laden wastewater unless the AFFF concentration is less than 50 ppm. The AFFF wastewater holding tank can be used to store foam supply or drainage after discharge, and slowly release the spent foam into the sewer system.

Other Models



APPLICATIONS



MACERATOR ASSEMBLY SYSTEM



PARK
USA
A Northwest Pipe Company

ENGINEERING FACTS

GENERAL INFORMATION

The ParkUSA Macerator Assembly is an “In-Line Grinder” system used on sewage systems. The unit is recommended for gravity-flow sewer lines which may experience high solid concentrations that can “clog” the sewer piping. Typical applications include detention and correctional institutions where vandalism is a frequent occurrence. Inmates tend to “stuff” sheets, towels, and shoes down toilets to cause flooding of the building. The macerator grinds up these solids avoiding costly flooding and maintenance.

OPERATION

The macerator assembly runs continuously to grind up all the sewage that enters the system. A control panel, typically located in a mechanical room, is the “brains” behind the grinder operation. Solids are pulverized with rotating hardened steel teeth. In the event an object is too hard or massive and requires multiple passes through the grinder, the controller will reverse the grinder and repeat the process. This sequence is performed multiple times until the object is destroyed. If the grinder is presented with objects which cannot be shredded after repeated tries, the controller will shut down the grinder and trigger a service alarm.

SYSTEM COMPONENTS

Main Housing: The main housing shall be cast from grade 65-45-12 Ductile Iron. Unit to be equipped with access port covers.

Cutters: Cutters and spacers shall be arranged in a one-piece multi-tooth cartridge. The cutter cams and shaft shall be hardened AISI 4140 alloy steel.

Seals and Bearings: The primary seals shall have elastomeric members which operate as opposing disk springs when compressed at the same time keeping the faces of the two metallic rings together insuring positive sealing. Bearings shall be oversized deep groove double seal type.

Drive and Motor: The macerator will be driven by a direct coupled speed reducer with a 5 H.P. Immiscible, 230/460 volts 3 phase 60 hertz motor. A flexible coupling will be used to segregate the reducer from the machine. The motor will have a service factor of 1.15.

Shaft Gears: Two Counter rotating shafts will be driven by two heavy-duty spur gears hardened to a Rockwell C of 40-45.

Electrical Controls: An Automatic Reversing Controller will be supplied with oil tight controls and overload heater protection. The contents of the controller will be encased in a NEMA enclosure. A three position “Hand-Off-Auto” switch will control the mode of operation. The controller will sense overload currents indicating a jam condition. The macerator will stop, then pause and reverse rotation. An “Alarm” light will be illuminated after four overloads. The controller will reset itself back to zero count if no overloads occur after 30 seconds. The controller shall incorporate a main disconnect switch. A vault sump pump relay and high-water level indicator shall be incorporated in the panel.

The ParkUSA Macerator Assembly is an “In-Line Grinder” system used on sewage systems. The unit is recommended for gravity-flow sewer lines which may experience high solid concentrations that can “clog” the sewer piping.

FEATURES

- Pre-Engineered Design of the Total Grinder Assembly Including Vault Enclosure
- Integral Bypass and Isolation Valves
- Sump Pump to Avoid Water Damage
- Uses Dual-Shafted Technology to Reduce Solids in Standard and Industrial Applications
- Utilizes a 3 or 5 Horsepower motor with a 29:1 Gear Reducer
- 2-inch 4140 Steel Hexagonal Shafts
- Varied Cutter Options to Optimize Performance and Particle Size
- Provides Protection of Downstream Pumps and Processing Equipment
- Features In-Line or In-Channel Cutter Stack Tightening Capabilities

DESIGN CONSIDERATIONS

The macerator assembly vault manufactured by ParkUSA is constructed of quality precast concrete, Class II 4500 PSI @ 28 days. Pre-casting the concrete shell insures that all units achieve structural and physical uniformity. The units are structurally engineered for H-20 truck loading (if specified) and can be buried without any need for additional structural protection. The bottom and walls are of monolithic construction to insure against joint leakage.

The assembly consists of pipe, valves, fittings and a grinder unit. Pre-assembled and installed within an appropriately sized concrete vault enclosure. Assemblies are pretested and inspected to adhere to our strict quality control standards.

All the equipment used within the macerator assembly are certified by one of the following associations: American Water Works Associations, American Society of Sanitary Engineering, CSA or Underwriters Laboratory.

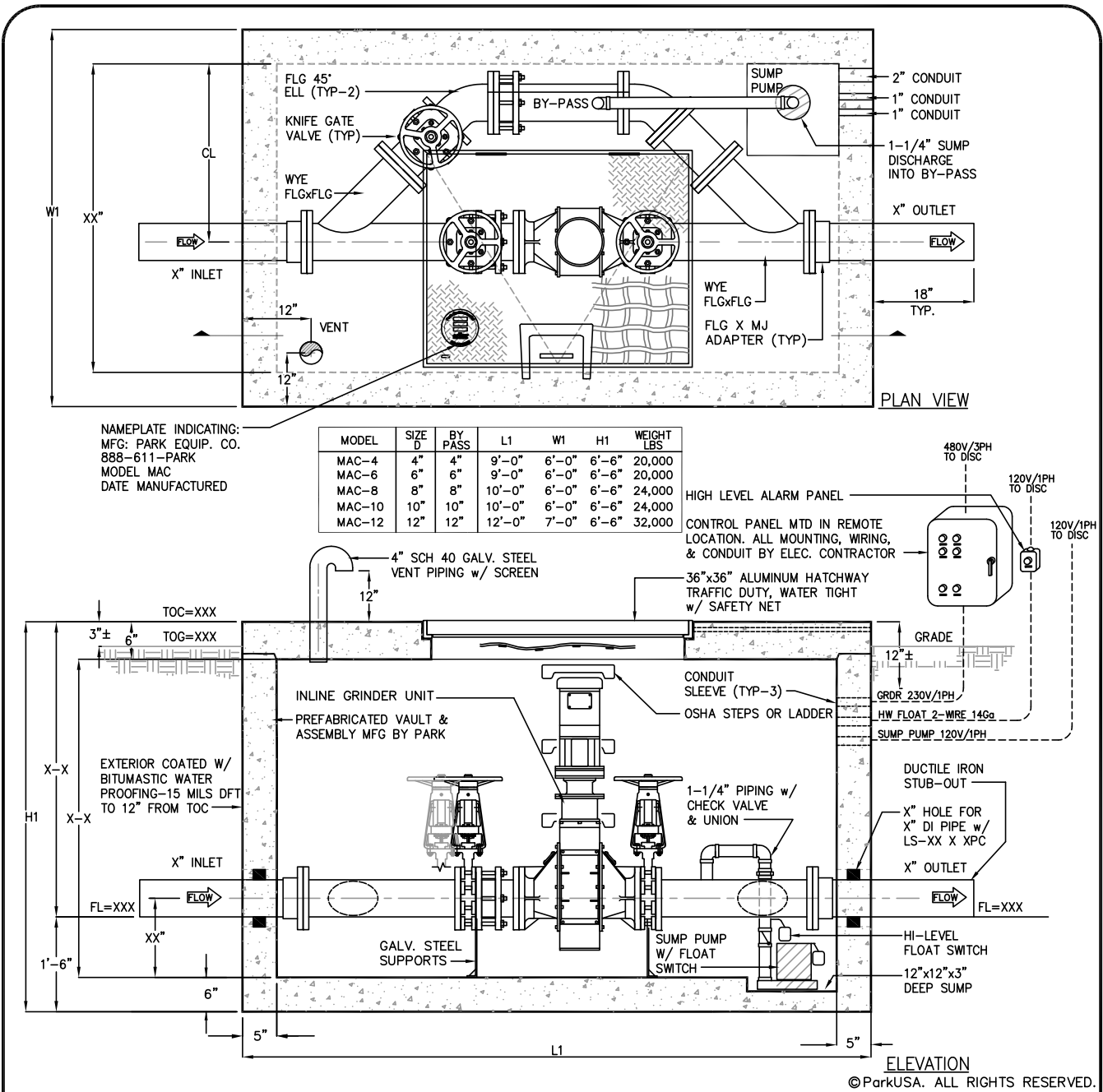
SIZING

ParkUSA offers full support on designing a Macerator Assembly. From the concrete box and piping selection, overall specifications and sizing is available from the engineering team.

Although standard sizing charts are inconvenient to establish for this type of unit, standard construction is well established. The macerator vault shall be constructed of precast concrete having a 28-day minimum compressive strength of 5000 PSI using a Type I Portland Cement. The vault shall be designed for H-20-44 traffic loading as defined by AASHTO 14th ED. 1989 using a 30 percent impact factor. Structural reinforcement placement and bending shall be in accordance to latest ACI standards. All reinforcements steel shall comply with ASTM A615 grade 60 or ASTM A706 Grade 60. Lifting inserts to be installed for handling per manufacturers requirements. The vault shall be coated with exterior vapor barrier Bitumastic, 15 mils DFT.

MAINTENANCE

Cleaning frequency depends on the characteristics of the wastewater entering a plant. Some plants have incorporated screening devices, such as basket-type trash racks, that are manually hoisted and cleaned. Screens reduce significantly the maintenance period of the Macerator. Mechanically cleaned screens usually require less labor for operation than manually cleaned screens because screenings are raked with a mechanical device rather than by facility personnel. However, the rake teeth on mechanically cleaned screens must be routinely inspected because of their susceptibility to breakage and bending. Drive mechanisms must also be frequently inspected to prevent fouling due to grit and rags. Grit removed from screens must be disposed of regularly.



SPECIFICATIONS

CONCRETE: CLASS I/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. COMBINED ASSEMBLY WEIGHT OF APPROXIMATELY AS INDICATED.

REINFORCEMENT: GRADE 60 REINFORCED. STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL. BAR BENDING & PLACEMENT SHALL COMPLY WITH THE LATEST ACI STANDARDS FOR PRECAST CONCRETE. LIFTING INSERTS SHALL BE INSTALLED PER MANUFACTURER'S REQUIREMENTS.

FABRICATED STEEL: ALL STEEL FABRICATION SHALL BE IN ACCORDANCE TO AWA D1.1. STEEL SHALL BE ASTM A36 CARBON STEEL, AND HOT-DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE TO ASTM A123.

UNIT SHALL BE STRUCTURALLY AND HYDRAULICALLY ENGINEERED CONFORMING TO UPC AND ACI BUILDING CODES. MANUFACTURER SHALL ENSURE VAULT ASSEMBLY DESIGN ACCOUNTS FOR PREVENTION OF BUOYANCY EFFECT.

FIELD EXCAVATION AND PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF INTERCEPTOR. USE DIMENSIONAL DATA AS SHOWN.

PROJECT : XX
 LOCATION : XX
 SUPPLIER :
 CONTRACTOR :
 PURCH ORDER # : JOB # : XX
 DATE : XX REVISED : PM: XX

888.611.PARK
www.park-usa.com

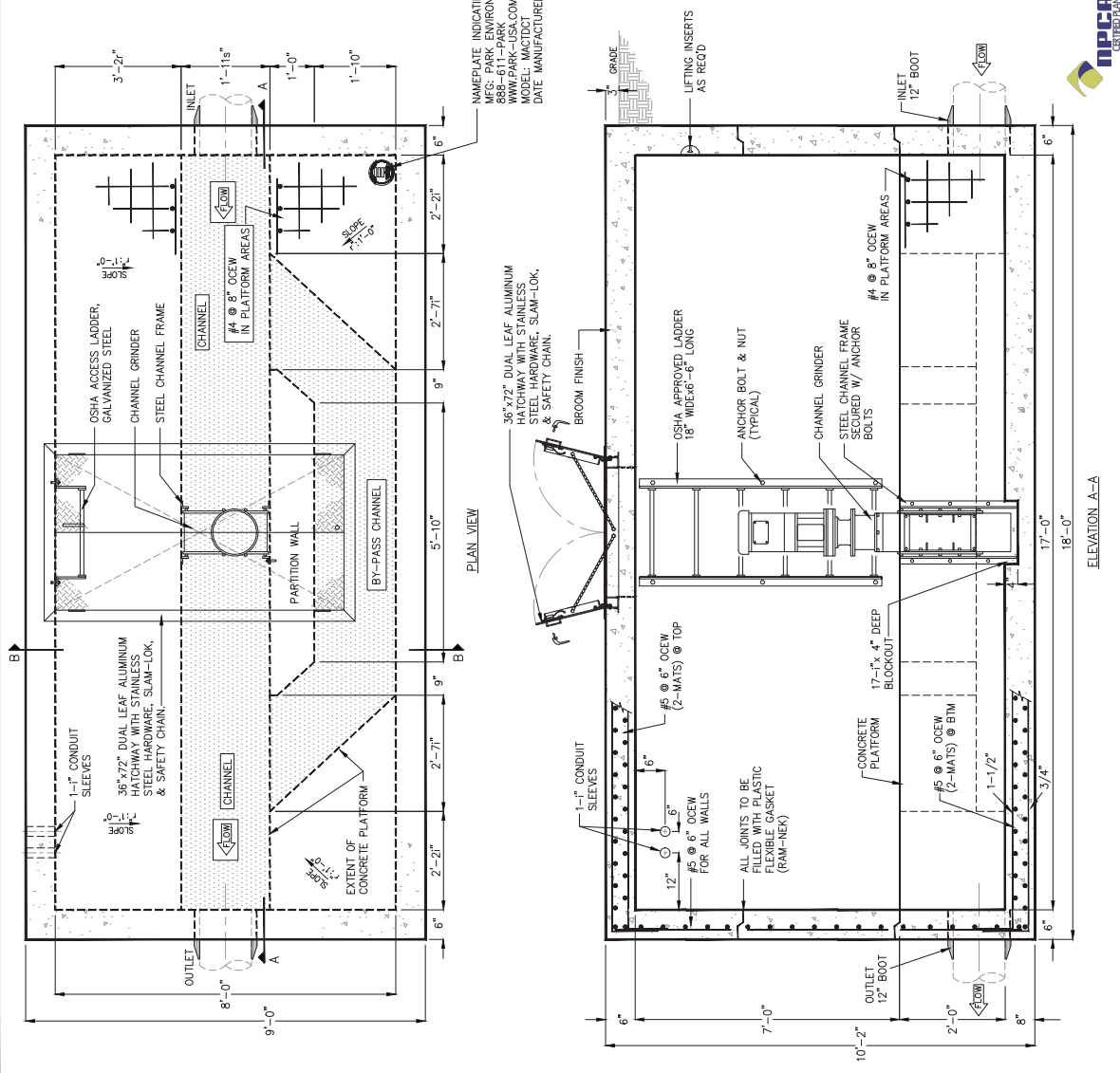
PARK USA
DESIGN FOR WATER

INLINE MACERATOR GRINDER ASSEMBLY
MODEL TDC SIZE 4" THRU 12"

SCALE	NONE	DWG. NO.	REV.
DATE	04/13	MAC-1	A

Specifications

- CONCRETE:** Class 1/VI concrete, with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth. Combined assembly weight of approximately 87,000 lbs.
- REINFORCEMENT:** Grade 60 reinforced steel rebar conforming to ASTM A615 required centers conforming to ASTM A615. Bar bending & placement shall comply with the latest ACI standards for precast concrete. Lifting inserts shall be installed per mfg's requirements.
- HATCHWAY:** Hatchway shall be constructed of 1/4" reinforced aluminum skid resistant floor plate with extruded aluminum frame w/ continuous concrete anchor, stainless steel tamperproof bolting & safety chain.
- Engineering Data**
Field excavation and preparation shall be completed prior to delivery of assembly. Use dimensional data as shown.

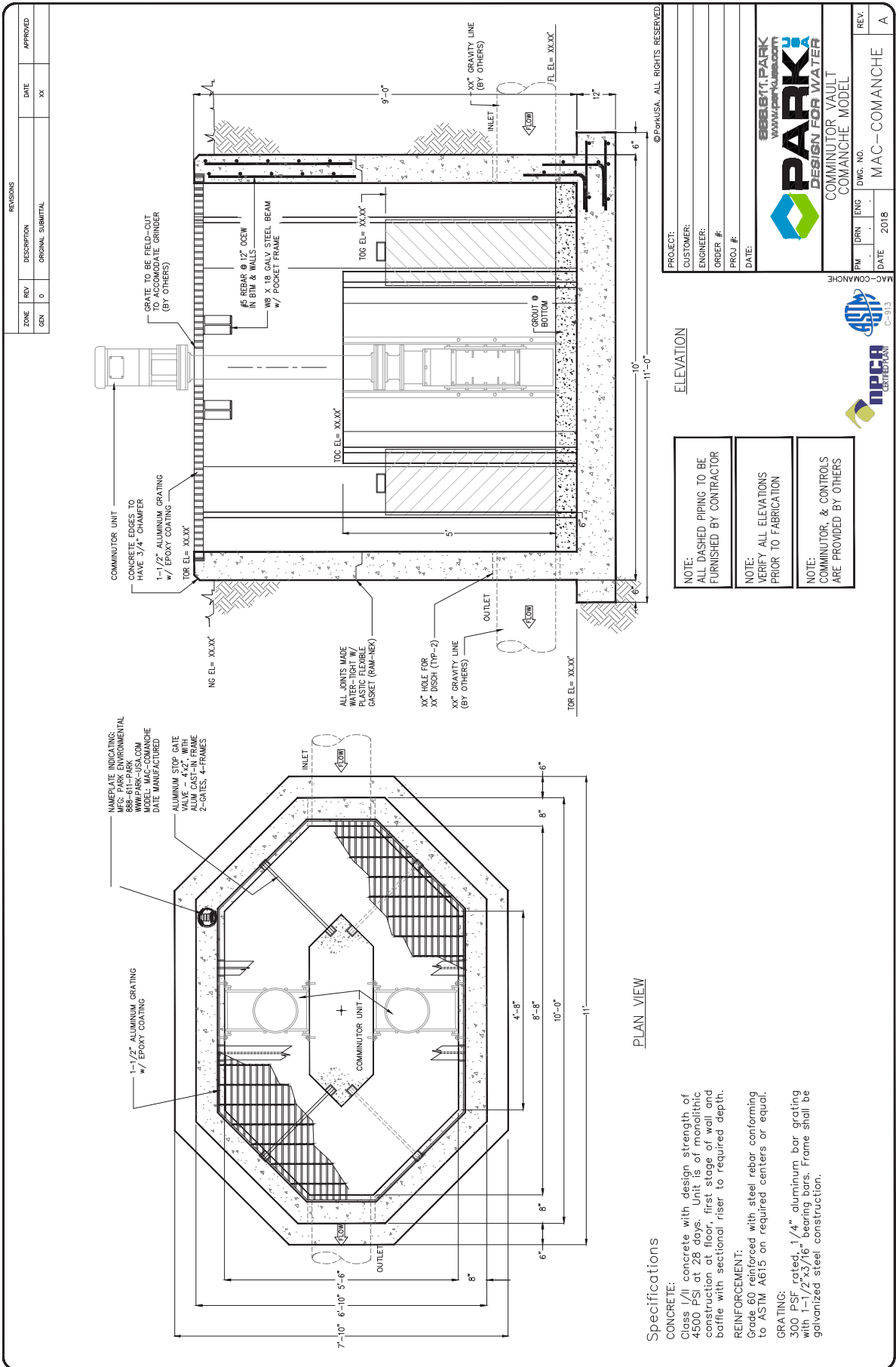


NOTE: GRINDER UNIT & ASSOCIATED MOUNTING HARDWARE & INSTALLATION TO BE FURNISHED BY OTHERS.

PROJECT:	888-611-PARK
CUSTOMER:	DESIGN FOR WATER
ENGINEER:	MAC-CH1
ORDER #	
DATE:	

REV.	DATE	BY	DESCRIPTION
A	2018	MAC-CH1	MAC-CH1

Wastewater Systems



Specifications

CONCRETE: Class /II concrete with design strength of 4500 PSI at 28 days. No. 4 rebar shall be placed in well with sectional riser to required depth. Combined assembly weight as indicated.

REINFORCEMENT: Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal. Bar bending & placement shall comply with the latest ACI standards for precast concrete. Lifting inserts shall be installed per manufacturer's requirements.

FABRICATED STEEL: All steel fabrication shall be in accordance to AWA 101. Steel shall be galvanized in accordance to hot-dipped galvanized after fabrication in accordance to ASTM A123.

Unit shall be structurally and hydraulically engineered conforming to UPC and ACI building codes. Manufacturer shall ensure vault assembly design accounts for prevention of buoyancy effect. Field excavation and preparation shall be completed prior to delivery of interceptor. Use dimensional data as shown.

KEYED NOTES:

MARK QTY	DESCRIPTION
1	1" SUMP DISCHARGE
2	1" SLEEVE w/ 1" CONDUIT w/ LS-300/4
3	FLANGE 45° ELBOW
4	3 KNIFE GATE VALVE
5	2 JUM 301 FLG X MJ ADAPTER
6	1 WYE FLOFLG
7	1 ACCESS SAFETY NET
8	1 AUTOMATIC BYPASS DEWICE
9	2 16" DUCTILE IRON STUB-OUT
10	1 18" SCH 40 GALV STEEL VENT
11	1 16" TEE FLOFLG
12	CONTROL PANEL MTD IN REMOTE LOCATION, ALL MOUNTING, WIRING & CONDUIT BY ELEC. CONTRACTOR
13	1 HIGH LEVEL ALARM PANEL
14	1 36"x36" ALUM ACCESS DOOR, H=20 RATED, WATERTIGHT
15	1 EXTERIOR COATED w/ BITUMASTIC
16	1 INLET CRUISER
17	1 10" SLEEVE w/ LS-475 x 10 PCS
18	1 18" WYE
19	1 12" PRNG w/ BALL VALVE & BALL CHECK
20	NAMEPLATE INDICATING: MFG: ParkUSA, Model: MACODC-6, DATE MANUFACTURED
21	1 WATER STOP @ PIPE PENETRATION
22	2 ANCHOR BOLT & NUT
23	2 GALV STEEL PIPE SUPPORTS
24	1 FLG x MJ ADAPTER
25	1 18"x18"x12" DEEP SUMP
26	1 HI-LEVEL FLOAT SWITCH
27	1 SUMP PUMP w/ FLOAT SWITCH
28	1 PREFABRICATED VAULT & ASSEMBLY (MFG BY PARKUSA)



MODEL	SIZE	BY PASS	L1	W1	H1	WEIGHT
MACODC-6	6"	6"	9'-0"	6'-0"	8'-6"	20,000

PROJECT: _____
 CUSTOMER: _____
 ENGINEER: _____
 ORDER #: _____
 PROJ. #: _____
 DATE: _____

PARK
DESIGN FOR WATER
WWW.PARKUSA.COM

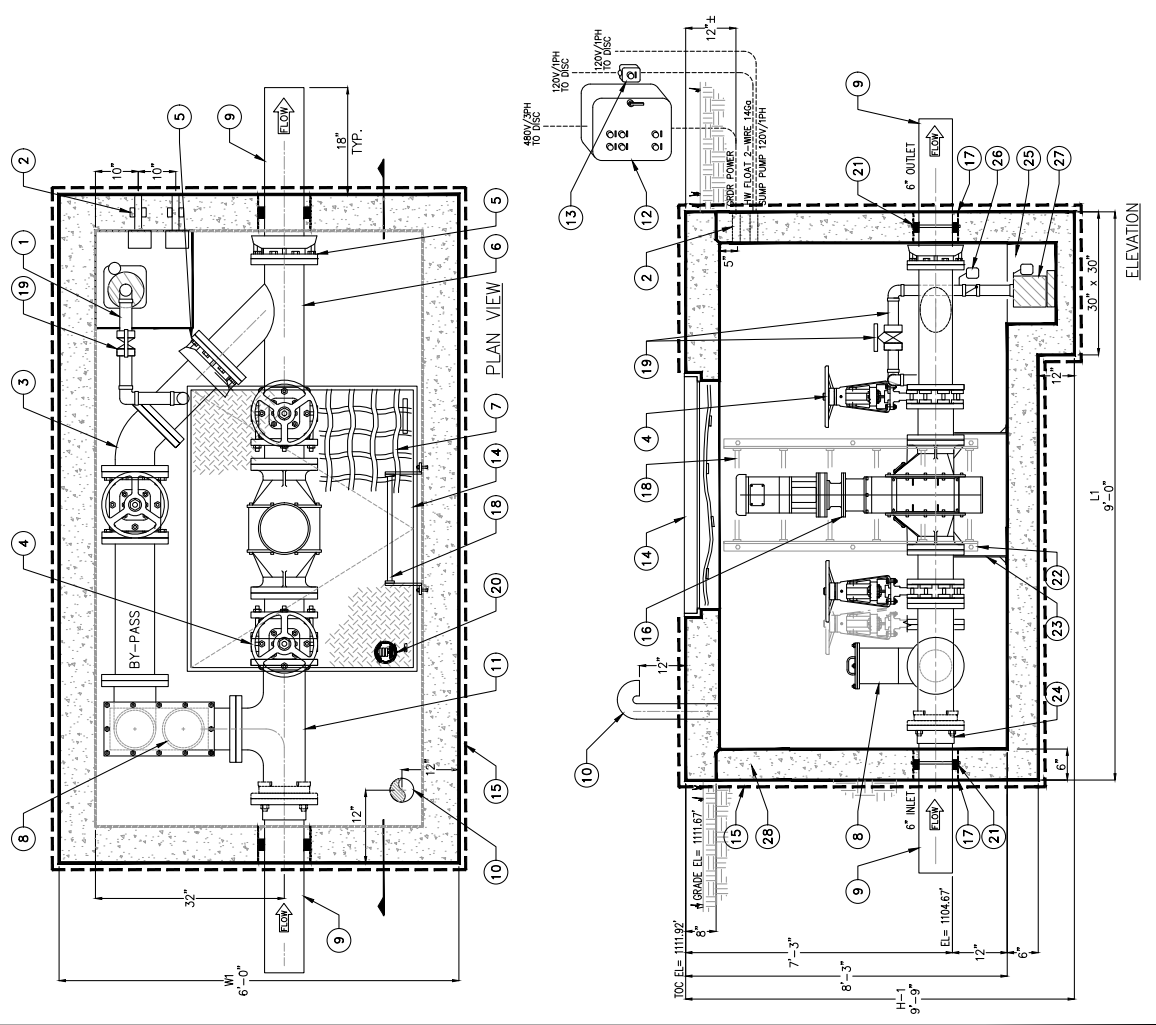
9-30000

PM: _____
 DRN: _____
 CHK: _____
 DATE: 2018
 DWG. NO.: MACODC-6
 REV.: A

NOTE:
ALL DASHED PIPING TO BE FURNISHED BY CONTRACTOR

NOTE:
VERIFY ALL ELEVATIONS PRIOR TO FABRICATION

NOTE:
VERIFY ALL INLET/OUTLET ORIENTATIONS PRIOR TO FABRICATION



**Wastewater
Systems**



MACERATORS™

InLine Grinders

Features

- Pre-engineered design of the total grinder vault assembly
- Inline, in-channel and gravity configurations
- Integral bypass piping and isolation valves
- Dual shafted, slow-speed, high-torque grinder
- Automated PLC Monitoring & Controls optimizes grinder performance

Benefits

- Provides protection of downstream pumps and processing equipment
- Prevents stoppages from stringy material like wipes, clothing, rocks, wood, & plastics
- Economical solution & quick lead times

In-line Grinder Systems

The ParkUSA® Grinder Assembly is an “InLine Grinder” recommended for use on gravity-flow sewer lines which may experience high solids that can “clog” the sewer piping. ParkUSA® Grinders reduce a wide variety of materials that enter sewer lines, including sanitary wipes, rags, wood, paper, shoes, sludge and more. Grinder units are proven to reduce pump clogging, protect process and dewatering equipment, reduce solids, and keep wastewater systems running properly.

A typical application includes detention and correctional institutions where vandalism is a frequent occurrence. Inmates tend to “stuff” sheets, towels, and shoes down toilets to cause flooding of the building. The grinder reduces these solids, avoiding costly flooding and maintenance.

Famous brands:

- Sewer Chewer
- Franklin Miller
- Vogelsang

OEM Brands:



#BUILDING AMERICA!

WW | MACERATORS
Standard



System Components

The ParkUSA® Macerator Assembly contains the main components described below:

Pre-engineered System: All ParkUSA® grinder package systems include all the necessary components for a functioning solids reduction system. The factory-built grinder systems have many advantages including precision fabrication, factory-testing, sustainable and reduced waste, quality control, and fast delivery.

Vault: The grinder system is oriented underground in a vault structure of precast concrete. The vault is accessible for inspection and maintenance through a waterproof hatchway with an OSHA safety net and ladder. The vault is kept dry from any water infiltration with an automatic sump pump.

Macerator Grinder: ParkUSA® utilizes famous brands for its grinder units. Each grinder body is manufactured of durable cast ductile iron. The twin shaft design provides high torque and low-speed. Grinder drives and motors are rated for continuous duty and with explosion-proof and immiscible configuration options.

Pipe and Fittings: Ductile iron piping and fittings rated for 150 psi meet ANSI/AWWA-C110 specifications. Each system is equipped with bypass piping for maintenance.

Valves: Knife gate valves with knife-edged gates are provided for their ability to cut through the sewage. The valves are manufactured from stainless steel to provide years of service.

Electrical Controls: The grinder unit is controlled by a PLC based controller that incorporates motor current monitoring and auto-reversal sequence. This ensures that unexpected debris will not jam and damage the grinder. The control system will display the grinder and vault sump pump operation status.



How it Works

The grinder assembly runs continuously to grind up all the sewage that enters the system. A control panel, typically located in a mechanical room, is the “brains” behind the grinder operation. Solids are pulverized with rotating hardened steel teeth. In the event an object is too hard or massive and requires multiple passes through the grinder, the controller will reverse the grinder and repeat the process. This sequence is performed multiple times until the object is destroyed. If the grinder is presented with objects which cannot be shredded after repeated tries, the controller will shut down the grinder and trigger a service alarm.

Visit grinder.parkusa.com for more information and design assistance.

To request a quote or catalog, visit request.parkusa.com.

APPLICATIONS



Industrial
Kitchens



Commercial



Medical
Facilities



Municipal



Industrial



Correctional
Facilities

BAR SCREEN



PARK
USA

A Northwest Pipe Company

ENGINEERING FACTS

GENERAL INFORMATION

Bar Screen Assemblies are used in an open channel (free surface) flow applications to separate & detain coarse debris and contraband. These unusual solids have a potential for “clogging” the public sewer line, causing expensive cleaning and downtime of the sewer system. Bar Screens can be used for sanitary or stormwater applications. As opposed to expensive automatic rake screens, bar screens are more economical but require manual cleaning.

Bar screens are ideal for facilities which have a full maintenance staff. The bar screen is designed for ease of maintenance while maximizing safety. The Bar Screen consists of a structural concrete vault assembly with a preformed channel. The channel is placed at the flowline elevation of the inlet and outlet sewer pipe connections (typically at 3 foot to 8 foot below grade). Within the channel, vertical stainless-steel screens are positioned at an inclined angle. Screen openings are typically ½ inch to 2 inches. Often, multiple screens are used with progressively smaller screen openings.

The ParkUSA's Bar Screen System presents several configurations depending on application. These variations include; concrete box arrangement, stainless steel bar screens, optional surface liners, and flow meters.

SYSTEM COMPONENTS

Regardless of the complexity of the system, the Bar Screen system comprises the following basic components:

- Precast Concrete Structure w/ Access Hatch, Grating, or Handrails
- Stainless Steel Platforms & Screens
- OSHA Approved Ladders
- Automatic Flow Meter & Totalizer Protective Surface Liners
- Hoists & Raking Tools

OPERATION

ParkUSA's Bar Screen System captures unwanted floatable pollutants from wastewater systems. In the unit, the influent will encounter a floatable collection bar screen that traps floating debris as small as 1 ½ inch in size, preventing them from invading rivers, drainage swales, lakes, bayous, estuaries, and coastal waters. The separated effluent will exit the Bar Screen System and continue through the sewer system, leaving behind the debris in the product.

DESIGN CONSIDERATIONS

Screening devices are classified based on the size of the material they remove (the screenings). The “size” of screening material refers to its diameter. The Table on the following page lists the correlation between screening sizes and screening device classification.

In addition to screening size, other design considerations include the depth, width, and approach velocity of the channel; the discharge height, the screen angle; wind and aesthetic considerations; redundancy; and head loss.

The use of fine screens produces removal characteristics similar to primary sludge removal in primary sedimentation. Fine screens are capable of removing 20 to 35 percent suspended solids and BOD5. Fine screens may be either fixed or movable, but are permanently set in a vertical, inclined, or horizontal position and must be cleaned by rakes, teeth, or brushes.

Bar Screen Assemblies are used in an open channel (free surface) flow applications to separate & detain coarse debris and contraband. These unusual solids have a potential for “clogging” the public sewer line, causing expensive cleaning and downtime of the sewer system.

FEATURES

- Various Bar Screen Designs
- Low Profile Design
- LEED Compliant
- Texas Manufactured
- Easy Installation and Maintenance

Screening Device Classification

SCREENING DEVICE CLASSIFICATION	SIZE CLASSIFICATION / SIZE RANGE OF SCREEN OPENING
BAR SCREEN	
MANUALLY CLEANED	COARSE / 25-50 MM (1-2 IN)
MECHANICALLY CLEANED	COARSE / 15-75 MM (0.6-3.0 IN)
FINE BAR OR PERFORATED COARSE SCREEN (MECHANICALLY CLEANED)	
FINE BAR	FINE COARSE / 3-12.5 MM (0.1-0.5 IN)
PERFORATED PLATE	FINE COARSE / 3-9.5 MM (0.1-0.4 IN)
ROTARY DRUM	FINE COARSE / 3-12.5 MM (0.1-0.5 IN)
FINE SCREEN (MECHANICALLY CLEANED)	
FIXED PARABOLIC	FINE / 0.25-3.2 MM (0.01-0.13 IN)
ROTARY DRUM	FINE / 0.25-3.2 MM (0.01-0.13 IN)
ROTARY DISK	VERY FINE (MICRO) / 0.15-0.38 MM (0.01-0.02)

SIZING

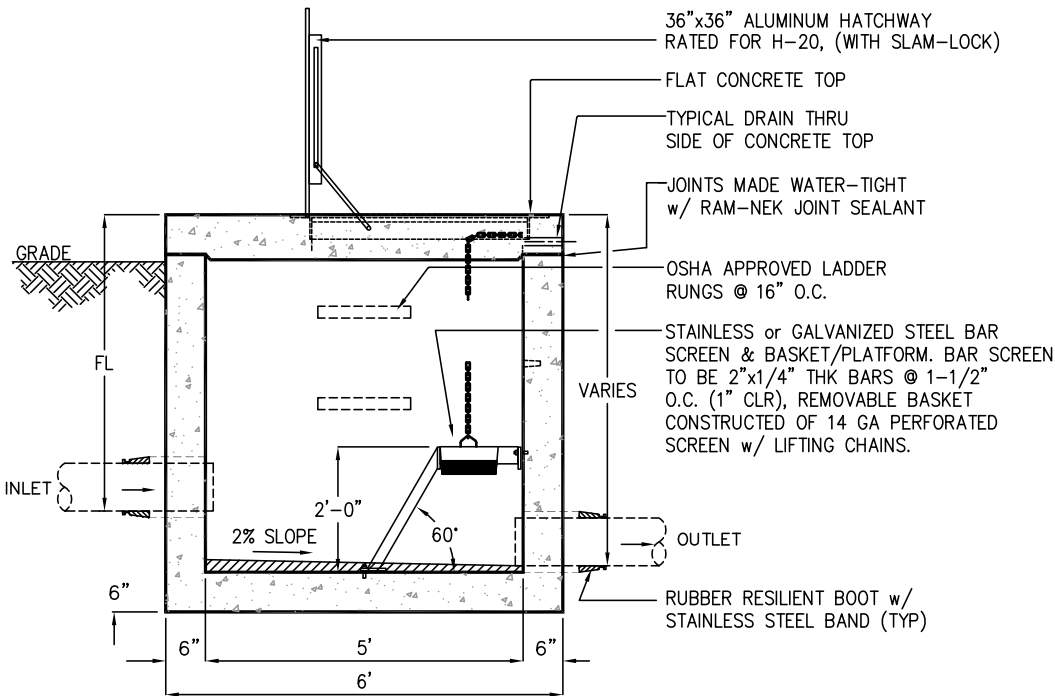
ParkUSA offers full support on designing a Bar Screen System. The variations present when designing a Bar Screen System tend to make difficult to standardize a model. Many variables have direct effect on the final model, such as space availability, rainfall intensity, sediments load, trash types, BOD/COD presence, etc.

The quantity of screenings depends on the length and slope of the collection system and the presence of pumping stations. When the collection system is long and steep or when pumping stations exist, fewer screenings are produced because of disintegration of solids. Other factors that affect screening quantities are related to flow, as quantities generally increase greatly during storm flows. Peak daily removals may vary by a 20:1 ratio on an hourly basis from average flow conditions. Combined collection systems may produce several times the coarse screenings produced by separate collection systems.

Given the complexity of collection systems and types of materials that may be considered "grit," the quantity and characteristics of grit removed from wastewater will vary. Grit quantity is influenced by the type and condition of the collection system, the characteristics of the drainage area, garbage disposal methods, the slope of the collection system, and the efficiency of the grit removal system.

MAINTENANCE

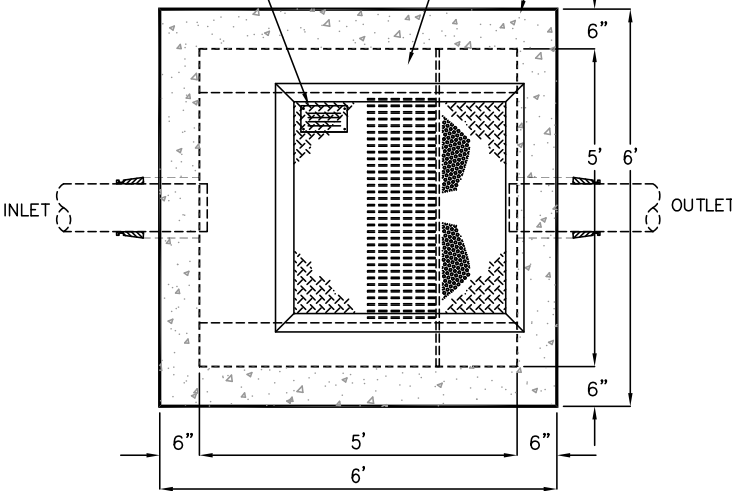
Manually cleaned screens require frequent raking to prevent clogging. Cleaning frequency depends on the characteristics of the wastewater entering a plant. Some plants have incorporated screening devices, such as basket-type trash racks, that are manually hoisted and cleaned. Mechanically cleaned screens usually require less labor for operation than manually cleaned screens because screenings are raked with a mechanical device rather than by facility personnel. However, the rake teeth on mechanically cleaned screens must be routinely inspected because of their susceptibility to breakage and bending. Drive mechanisms must also be frequently inspected to prevent fouling due to grit and rags. Grit removed from screens must be disposed of regularly.



ELEVATION

NAMEPLATE INDICATING:
MFG: PARKUSA
888-611-PARK
MODEL BSQ-XXX-XX
DATE MANUFACTURED

CONCRETE PLATFORM
PRECAST CONCRETE BASIN w/ MONOLITHIC BOTTOM



PLAN VIEW

HOW TO SPECIFY BY MODEL NUMBER:

BSQ-XXX-XX

LINER OPTIONS

- [S]-NO EXTERIOR LINER
- [B]-BUTUMASTIC EXTERIOR LINER
- [E]-EPOXY EXTERIOR LINER
- [S]-NO INTERIOR LINER
- [E]-EPOXY INTERIOR LINER
- [P]-POLYETHYLENE INTERIOR LINER

HATCHWAY OPTIONS

- [S]-STD HATCHWAY
- [LW]-WATERPROOF HATCHWAY
- [P]-PEDISTRIAN DUTY HATCHWAY
- [LH]-TRAFFIC DUTY HATCHWAY

BAR SCREEN ASSEMBLY OPTIONS

- [G]-GALVANIZED STEEL SCREEN ASSEMBLY
- [S]-STAINLESS STEEL SCREEN ASSEMBLY

PROJECT:
CUSTOMER:
ENGINEER:
ORDE #:
PROJ #:
DATE:

SPECIFICATIONS

CONCRETE: Class I/II concrete with of design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.

REINFORCEMENT: Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.

HATCHWAY: Hatchway is of aluminum skid-resistant floor plate, extruded aluminum frame w/ continuous concrete anchor and door seat, stainless steel hinges and tamperproof bolting.



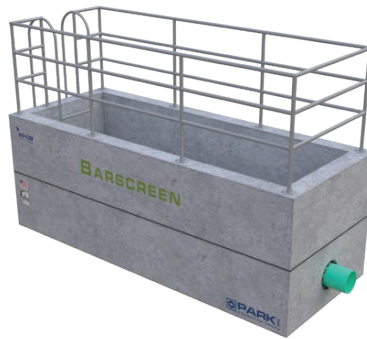
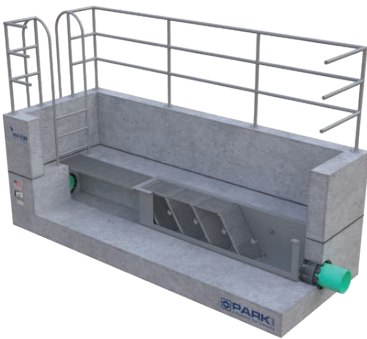
BAR SCREEN MODEL BSQ

PM	DRN	CHK	DWG. NO.	REV.
DATE	03/15		BSQ-1	A



Wastewater Screen Assembly

The ParkUSA® BarScreen™ is a stationary screen device used for wastewater or stormwater applications. Bar screen assemblies are used in open channel (free surface) flow applications to separate & detain coarse debris and contraband. These unusual solids have a potential for “clogging” the public sewer line, causing expensive cleaning and downtime of the sewer system. As opposed to expensive automatic rake screens, bar screens are more economical.



BARSCREEN™

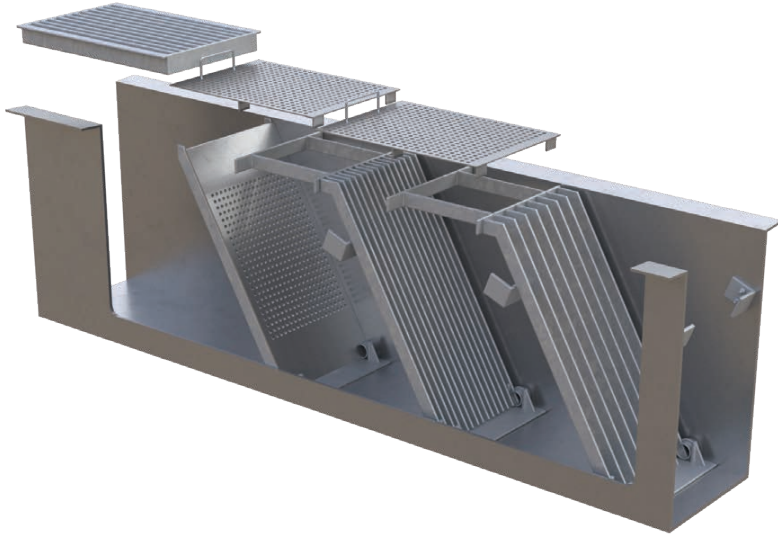
WASTEWATER SCREEN ASSEMBLY

Features

- Various bar screen designs
- Corrosion resistant construction
- LEED compliant
- Easy installation and maintenance
- Made in the USA - BarScreens are made in America and meet the requirements of the Buy America Act



WW | **BARSCREEN**
Standard



How it Works

ParkUSA®'s Bar Screen System captures unwanted floatable pollutants from wastewater and storm sewer systems. In the unit, the influent will encounter a floatable collection bar screen that traps debris as small as 1½" in size, preventing them from invading sewers, rivers, drainage swales, lakes, bayous, estuaries, and coastal waters. The separated effluent will exit the Bar Screen System and continue through the system, leaving behind the debris.

Bar screens are ideal for facilities which have a full maintenance staff. The bar screen is designed for ease of maintenance while maximizing safety. The Bar Screen™ consists of a structural concrete vault assembly with a preformed channel. The channel is placed at the flowline elevation of the inlet and outlet sewer pipe connections (typically at 3' to 8' below grade). Within the channel, vertical stainless-steel screens are positioned at an inclined angle. Screen openings are typically ½" to 2". Often, multiple screens are used with progressively smaller screen openings.

Visit barscreen.parkusa.com for more information and design assistance.

To request a quote or catalog, visit request.parkusa.com.

System Components

The Bar Screen system is comprised of the following basic components:

- Precast concrete structure w/ access hatchways or grating
- Stainless steel platforms & screens
- OSHA approved ladders, handrails, & hoists
- Protective surface liners



APPLICATIONS



Good to use
in BMPs



Trash
Retention



Correctional
Facilities

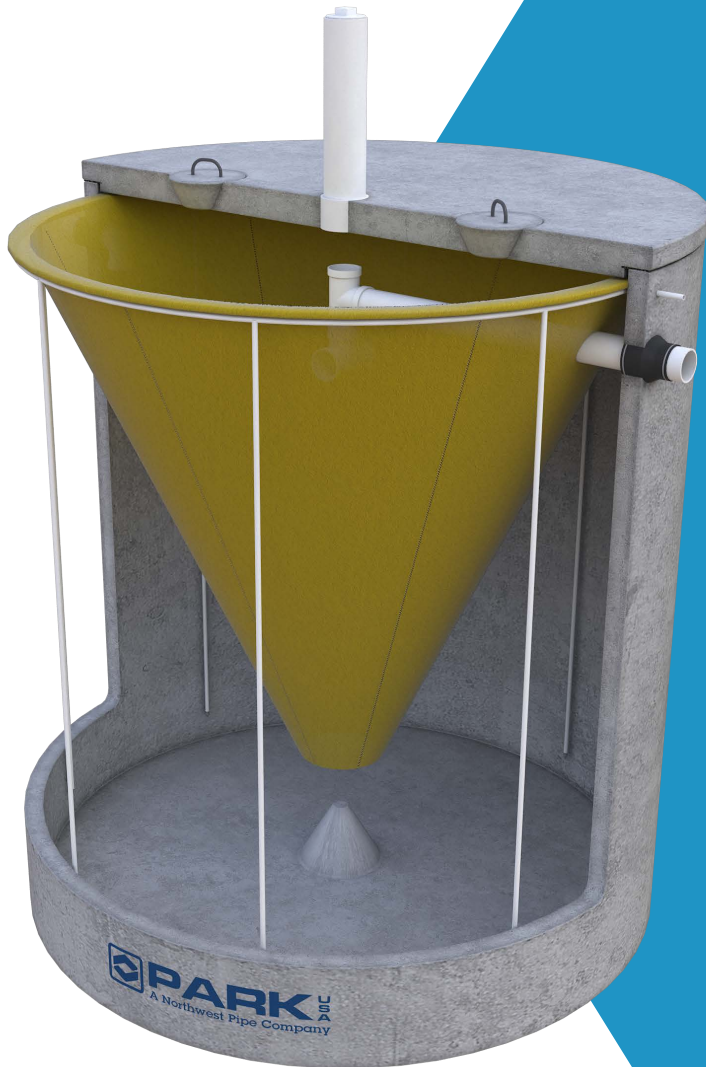


Industrial



Medical
Facilities

AEROBIC TREATMENT SYSTEM




PARK
USA
A Northwest Pipe Company

ENGINEERING FACTS

GENERAL INFORMATION

When a public sewer system is not available, a building sewer is required to have an on-site wastewater treatment system. Local and state authorities typically regulate on-site sewage treatment systems. There are two main types of onsite wastewater treatment systems;

1. Anaerobic - (no oxygen)
2. Aerobic - (oxygen using)

This document will discuss the typical aerobic treatment system. The aerobic treatment systems are also known as aerobic biological systems or package treatment systems. This type of systems treats wastewater better than the typical anaerobic septic systems. The aerobic system offers better solids separation and reduced sludge volume. The aerobic system produces high quality effluent, which can be disposed of through one of the following methods:

1. Conventional soil absorption beds
2. Drip irrigation
3. Above ground spraying

SYSTEM COMPONENTS

The ParkUSA aerobic treatment system includes the following standard & optional components:

- Concrete Containment Vault
- High Level Monitoring Sensors & Controls
- Precast Concrete
- Access covers or hatchways
- Safety hatch nets

OPERATION

Septic/Pretreatment Tank: The septic or pretreatment tank should be constructed to maximize the amount of solids it separates. The tank can be single or double compartments and made of precast concrete (4500 psi@28 days). Adequate access must be provided to each compartment for easy accessibility, inspection, and cleaning. The septic/pretreatment tank shall be constructed in conformance to ASTM-C1227 and local/state requirements.

Aerobic Treatment Plant: The treatment plant is a pre-engineered treatment tank that utilizes aerobic (oxygen using) action to break down raw sewage. This system consists of concrete or fiberglass mixing tank, an internal cone shaped settling chamber and air injection equipment. The injected air enables naturally occurring bacteria to thrive and grow in much greater numbers than would occur naturally. This "overpopulation" of the bacteria speeds the process of breaking down the sewage.

The raw sewage enters the mixing chamber where mixing occurs through an air distribution system. The solids remain in suspension with a general flow up the mixing tank wall and down the outside of the settling chamber. The mixed liquid then enters the settling chamber from the bottom. The settling chamber maintains a quiet condition that allows solids to settle down and re-enter the mixing chamber for more processing. The liquid is hydraulically displaced upward and is discharged as clear odorless treated water that meets or exceeds state water quality standards. Treatment tanks must meet stringent specifications and are ANSI/NSF 40 Certified and state approved.

Pump/Dosing Tanks: The sewage discharge from the treatment tank gravity flows into the pump tank. The pump tank is constructed of concrete or fiberglass. The tank contains either one (simplex) or two (duplex) submersible pumps. When the level rises to a set level the pump(s) will pump the treated sewage to an absorption bed, drip irrigation field or above ground sprayers. The pump(s) is controlled with float switches, control panel and a timer.

When a public sewer system is not available, a building sewer is required to have an on-site wastewater treatment system. Local and state authorities typically regulate on-site sewage treatment systems.

FEATURES

- OSHA Manway Access Cover
- Chemical Resistant Tank Construction
- Prepackaged System for Easy Specification & Installation
- Maintenance Notification System; Alerts of Tank Full Capacity
- Optional Metering Pump & Controls

Chlorinator: If the treated sewage needs further treatment, a chlorinator is employed to add small amounts of chlorine to the effluent. This chlorine will kill in remaining pathogens. The chlorinator is generally used for above ground disposal. The chlorinator uses chlorine tablets that are dissolved in the effluent flow stream.

DESIGN CONSIDERATIONS

A professional engineer or registered sanitarian should design the aerobic treatment system. Consult local and state authorities for specific system requirements.

All septic, pretreatment, aerobic plants, or pumps tanks manufactured by ParkUSA are constructed of quality precast concrete, Class I 4500 PSI@28 days. The tanks are constructed in conformance to ASTM C1227. Pre-casting the concrete shell insures that all units achieve structural and physical uniformity. The units are structurally engineered for H-20 truck loading and can be buried without any need for any other structural protection. The unit is of monolithic construction at bottom to ensure against joint leakage.

SIZING

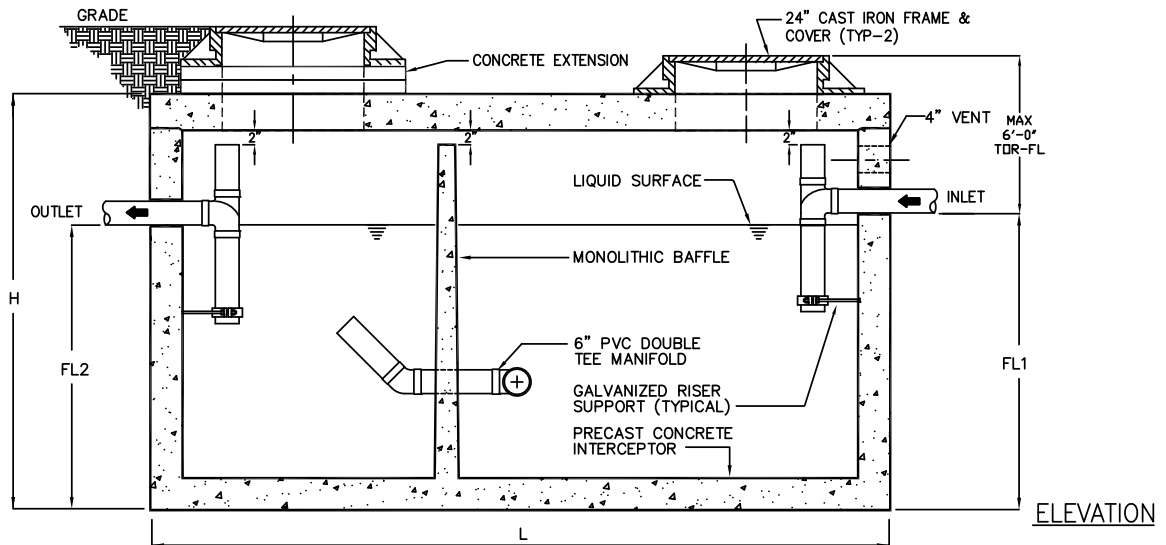
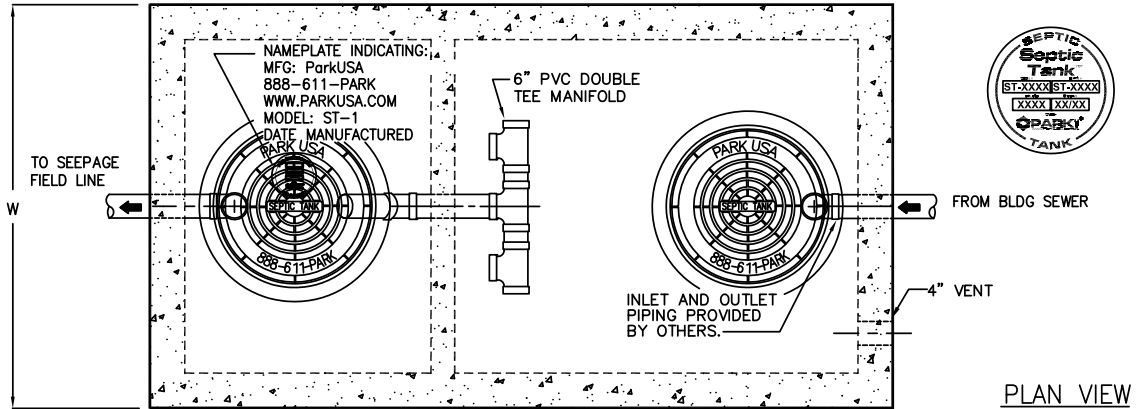
Since this is a special product that requires coordination and careful review of different variables involved, it results complex to establish a standard chart with model and size. ParkUSA offers assistance with the complete design and specifications for this product.

MAINTENANCE

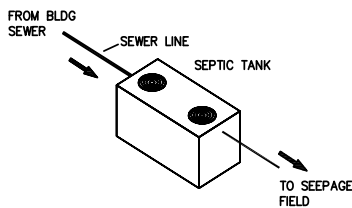
The aerobic system unit should be inspected periodically for any accumulation that could occur during normal operation. In the unfortunate event of spill, the unit should immediately be serviced to remove hazardous material.

When necessary, the unit should be pumped out by a licensed pumping company familiar with regulations regarding proper disposal.





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TYPICAL APPLICATIONS INCLUDE COMMERCIAL AND INDUSTRIAL SEPTIC SYSTEMS WHERE A SEPTIC TANK AND SEEPAGE FIELD IS UTILIZED FOR THE SEWER SYSTEM. THE SEPTIC TANK IS GENERALLY BURIED BELOW GRADE FOR GRAVITY FLOW SEWER SYSTEMS.

SPECIFICATIONS

- CONCRETE : CLASS I/II CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR, FIRST STAGE OF WALL AND BAFFLE WITH SECTIONAL RISER TO REQUIRED DEPTH. (MONOLITHIC BAFFLE REQUIRED, SLIDE-IN TYPE IS NOT ACCEPTABLE)
- REINFORCEMENT: GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
- C.I. CASTINGS: MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30. MANHOLE SHALL BE NOMINAL 24 INCH DIAMETER AND BE TRAFFIC DUTY.

SEPTIC TANK SCHEDULE							
MODEL NO.	CAPACITY USGal	EMPTY WT (LBS)	LENGTH L	WIDTH W	HEIGHT H	INLET FL1	OUTLET FL2
ST-500	500	9,500	7'-10"	4'-4"	4'-6"	3'-3"	3'-0"
ST-750	750	9,900	7'-10"	4'-4"	6'-0"	4'-5"	4'-2"
ST-1000	1,000	13,350	8'-8"	5'-0"	6'-0"	4'-9"	4'-6"
ST-1250	1,250	14,650	9'-2"	5'-8"	6'-0"	4'-9"	4'-6"
ST-1500	1,500	16,050	9'-2"	5'-8"	7'-0"	5'-9"	5'-6"
ST-2000	2,000	21,250	9'-0"	6'-0"	8'-0"	6'-9"	6'-6"
ST-2200	2,200	21,250	13'-0"	7'-0"	6'-0"	4'-9"	4'-6"
ST-2500	2,500	27,050	13'-0"	7'-0"	7'-0"	5'-9"	5'-6"
ST-3000	3,000	33,150	13'-0"	7'-0"	8'-0"	6'-9"	6'-6"
ST-3500	3,500	38,550	13'-0"	7'-0"	8'-6"	7'-3"	7'-0"
ST-4000	4,000	38,100	16'-0"	8'-6"	7'-0"	5'-9"	5'-6"

OTHER SIZES ARE AVAILABLE. CONTACT US FOR MORE INFORMATION

ENGINEERING DATA

THE SEPTIC TANK IS STRUCTURALLY & HYDRAULICALLY ENGINEERED TO CONFORM TO ASTM C-1227 AND REGIONAL PLUMBING CODES RECOMMENDED IN MOST CITIES. CONSULT WITH LOCAL AUTHORITIES FOR SPECIFIC APPLICATION REQUIREMENTS.

SHOP DRAWINGS SHALL INCLUDE COMPLETE STRUCTURAL & BOUANCY CALCULATIONS CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER UPON REQUEST.

CONSULT WITH PARKUSA FOR EXACT EXCAVATION DIMENSIONS & SHIPPING INFORMATION.

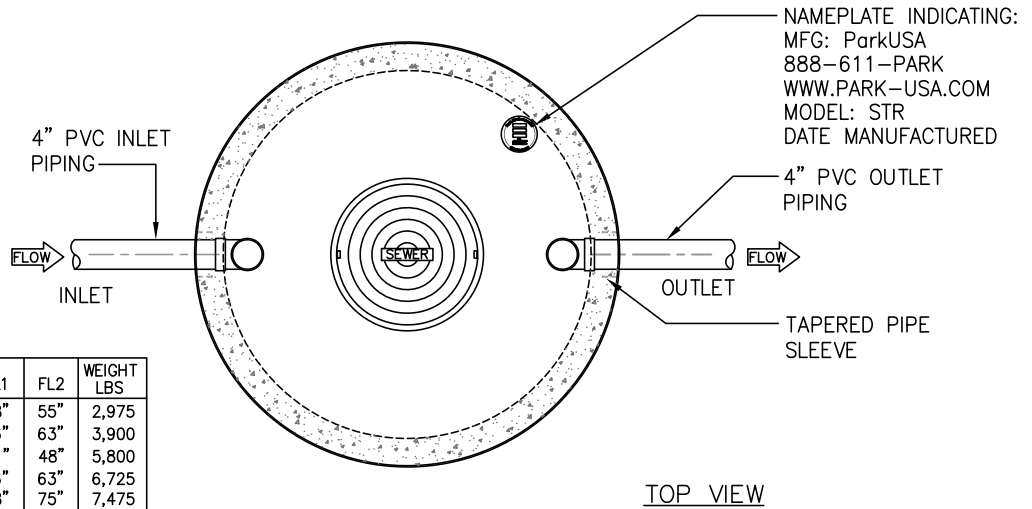


www.parkusa.com

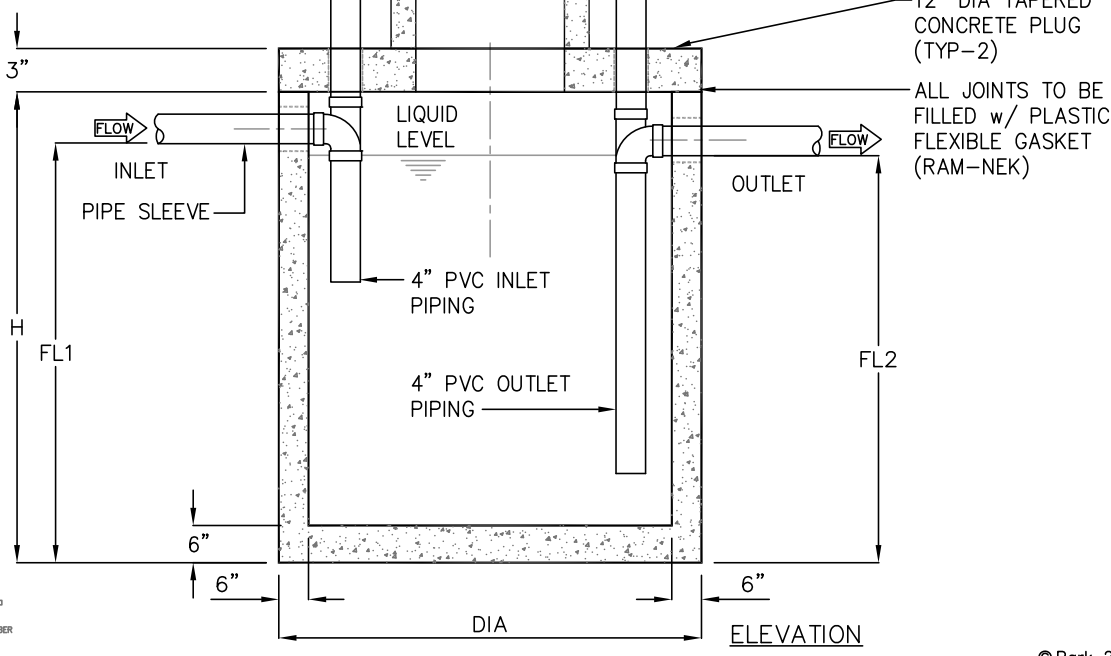
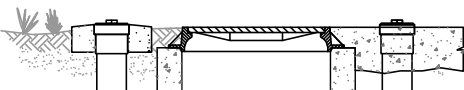
888-611-PARK

SEPTIC TANK SERIES ST
500 THRU 4000 GALLON CAPACITY

SCALE	NONE	DWG. NO.	REV.
DATE	2019	ST-1	A



MODEL	DIA	H	FL1	FL2	WEIGHT LBS
STR500	57"	64"	58"	55"	2,975
STR750	65"	73"	66"	63"	3,900
STR800	78"	57"	51"	48"	5,800
STR1000	78"	72"	66"	63"	6,725
STR1250	78"	84"	78"	75"	7,475
STR1500-6	78"	96"	90"	87"	8,200
STR1500-8	102"	60"	54"	51"	8,900
STR1800	102"	72"	66"	63"	9,800
STR2250	102"	84"	78"	75"	10,800
STR2500	102"	96"	90"	87"	11,800



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Specifications

CONCRETE : Class 1 concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.

REINFORCEMENT: Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal.

Engineering Data

The septic tank is structurally & hydraulically engineered to conform to ASTM C-1227 and regional plumbing codes recommended in most cities. Consult with local authorities for specific application requirements.

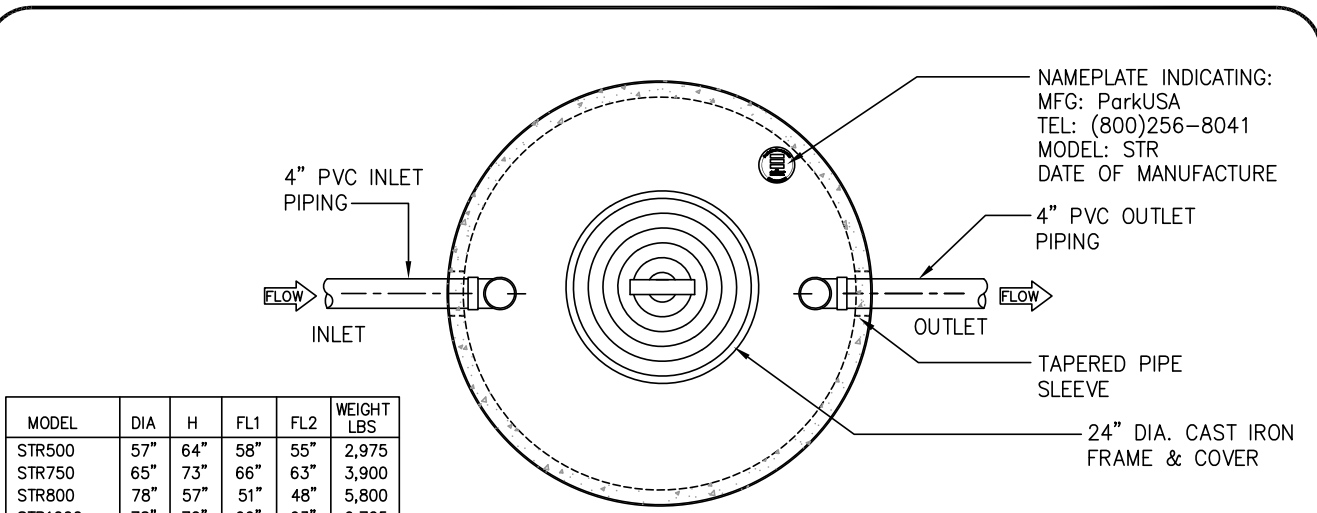
Field excavation and preparation shall be completed prior to delivery of interceptor. Use dimensional data as shown.

PROJECT : _____
 CUSTOMER : _____
 ARCHITECT : _____
 ENGINEER : _____
 ORDER # : _____ DATE : _____



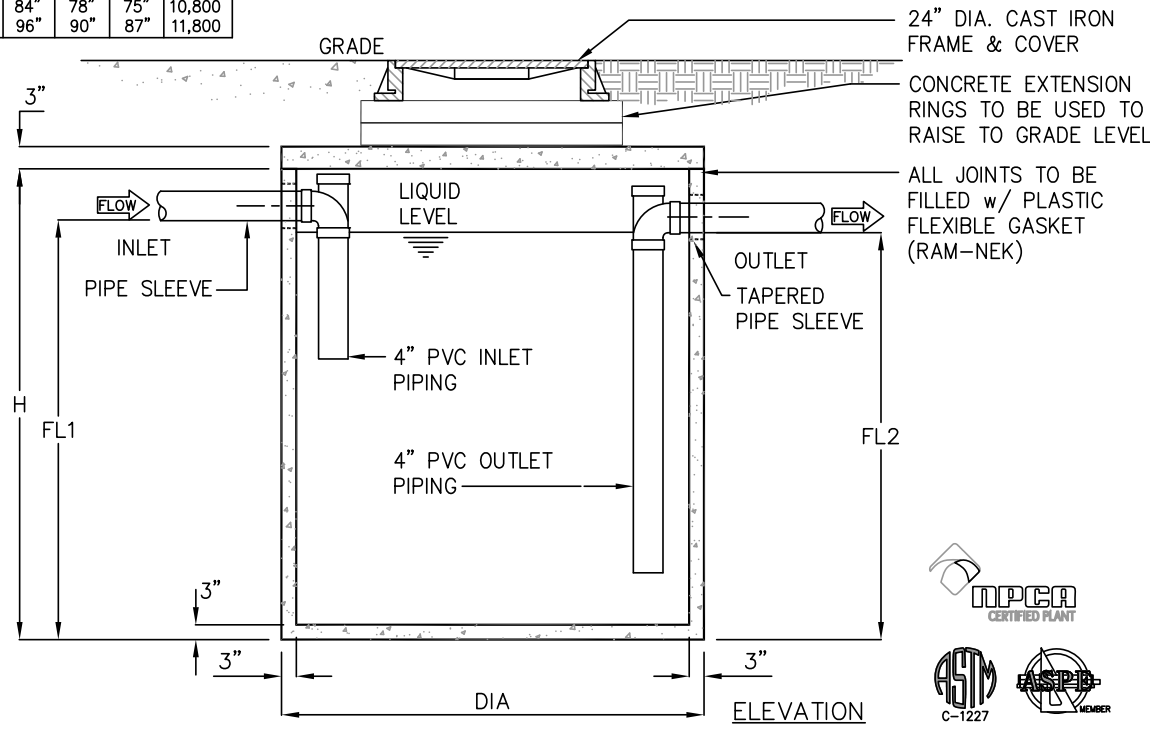
**SEPTIC TANK MODEL STRHD
500 THROUGH 2500 GALLONS**

PM	DRN	CHK	DWG. NO.	REV.
DATE	04/16		STR-1	A



MODEL	DIA	H	FL1	FL2	WEIGHT LBS
STR500	57"	64"	58"	55"	2,975
STR750	65"	73"	66"	63"	3,900
STR800	78"	57"	51"	48"	5,800
STR1000	78"	72"	66"	63"	6,725
STR1250	78"	84"	78"	75"	7,475
STR1500-6	78"	96"	90"	87"	8,200
STR1500-8	102"	60"	54"	51"	8,900
STR1800	102"	72"	66"	63"	9,800
STR2250	102"	84"	78"	75"	10,800
STR2500	102"	96"	90"	87"	11,800

TOP VIEW



Specifications


CONCRETE : Class 1 concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.

REINFORCEMENT: Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal.

Engineering Data

The septic tank is structurally & hydraulically engineered to conform to ASTM C-1227 and regional plumbing codes recommended in most cities. Consult with local authorities for specific application requirements.

Field excavation and preparation shall be completed prior to delivery of interceptor. Use dimensional data as shown.

PROJECT :				
CUSTOMER :				
ARCHITECT :				
ENGINEER :				
ORDER # :		DATE :		
 888.611.PARK www.park-usa.com PARK USA DESIGN FOR WATER				
SEPTIC TANK MODEL STR 500 THROUGH 2500 GALLONS				
PM	ENG	DRN	DWG. NO.	REV.
DATE 04/16		STR-2		A

ANAEROBIC TREATMENT SYSTEM



PARK
USA
A Northwest Pipe Company

ENGINEERING FACTS

GENERAL INFORMATION

When a public sewer system is not available, a building sewer is required to have an on-site wastewater treatment system. Local and state authorities typically regulate on-site sewage treatment systems. There are two main types of onsite wastewater treatment systems:

1. Anaerobic - (no oxygen)
2. Aerobic - (oxygen using)

This document will discuss the anaerobic systems and how they are used in an anaerobic treatment system. The typical anaerobic treatment system will consist of a septic tank with the effluent discharging into a sub-surface soil absorption field, bed, one or more seepage pits, or a combination of these.

SYSTEM COMPONENTS

The ParkUSA anaerobic treatment system includes the following standard & optional components:

- Concrete Containment Vault
- High Level Monitoring Sensors & Controls
- Precast Concrete
- Access covers or hatchways
- Safety hatch nets

OPERATION

The domestic sewage that discharges down the building sewer is composed of water and waste matter. There are two types of waste matter, suspended solids like coffee grounds and dissolved solids like sugar in coffee. This sewage will quickly clog all but the most porous gravel soil formations.

A major function of a septic tank is to remove as many solids as possible from the sewage. The out flowing liquid (effluent) will finally be distributed over an adequate area of land where it can be dispersed in a soil absorption field. The absorption field is usually a series of parallel trenches, each containing a distribution pipe embedded in drain field gravel. The effluent drains out through holes in the pipe into the gravel bed, and then into the soil. The soil filters remaining minute solids and pathogens (disease-producing microorganisms). Water and dissolved substances slowly percolate outward into the soil and down toward ground water or restrictive layer. Some of the water evaporates or is used by plants.

A second function of the septic tank is to treat the solids remaining in the tank with bacteria of the anaerobic species (only active in the absence of oxygen). Given enough time, these bacteria decompose the solids, and eventually make them stable. This decomposition or treatment of the sewage under anaerobic conditions is termed "putrefaction" or "septic" hence the name of the tank.

A third function of the tank is to store the solids. A rock is chemically stable, whereas an orange, for example, is unstable because bacteria and fungus can decompose it until it is stable and is no longer subject to bacterial action. This process of bacterial breakdown is called digestion. There are three layers in the tank. These include sludge at the bottom (heavier solids that have settled), scum at the top (fats and greases, light solids that have risen), and in-between, relatively clear sewage that still contains sugars, detergents, and other dissolved solids.

The anaerobic bacteria work in all three layers. These bacteria reduce the size and weight of the solids by turning a large part of them into liquids and gases. Thus, a pound of solids entering a tank may be only a fraction of the weight three months later. Every time raw sewage enters the tank, it forces an equal amount of treated sewage out of the tank. Septic tank tees or baffles prevent the sludge and top scum layer from exiting the tank with the treated sewage. The sewage effluent leaving the tank may still contain pathogens and are dispersed into the soil absorption drain field. Bacteria present in the soil carry out further digestion.

When a public sewer system is not available, a building sewer is required to have an on-site wastewater treatment system. Local and state authorities typically regulate on-site sewage treatment systems.

FEATURES

- OSHA Manway Access Cover
- Chemical Resistant Tank Construction
- Prepackaged System for Easy Specification & Installation
- Maintenance Notification System; Alerts of Tank Full Capacity
- Optional Metering Pump & Controls

DESIGN CONSIDERATIONS

Capacity is one of the most important considerations in septic tank design. Allowing for ample tank capacity is important from a functional standpoint as well as good economy. Consult local codes and requirements for septic tank sizing.

Septic tanks have a minimum of two compartments. Two compartment tanks of the proper proportions provide better total suspended solids (TSS) removal than tanks with one compartment or tanks with more than two compartments. This is especially valuable for the protection of disposal fields or beds.

The inlet compartment of any septic tank must be not less than two thirds of the total capacity of the tank, nor less than 500 gallons liquid capacity. The tank must be at least 3 feet wide and 5 feet long. Liquid depth must be not less than 2.5 feet.

The second compartment must have a minimum 250-gallon capacity or a maximum of one third of the total capacity of the tank. Adequate access must be provided to each compartment for easy accessibility, inspection, cleaning, and removal of intercepted waste products. There should be an adequate number of manholes to permit access for cleaning all areas of the interceptor. A manhole should be located near the inlet and the outlet. The manhole should not be less than 20 inches in the least dimension. All manholes should extend to grade.

The septic tank should be buried so as to intercept the building sewer. Inlet and outlet piping shall be a minimum of 4 inches or the size of the building sewer, whichever is greater.

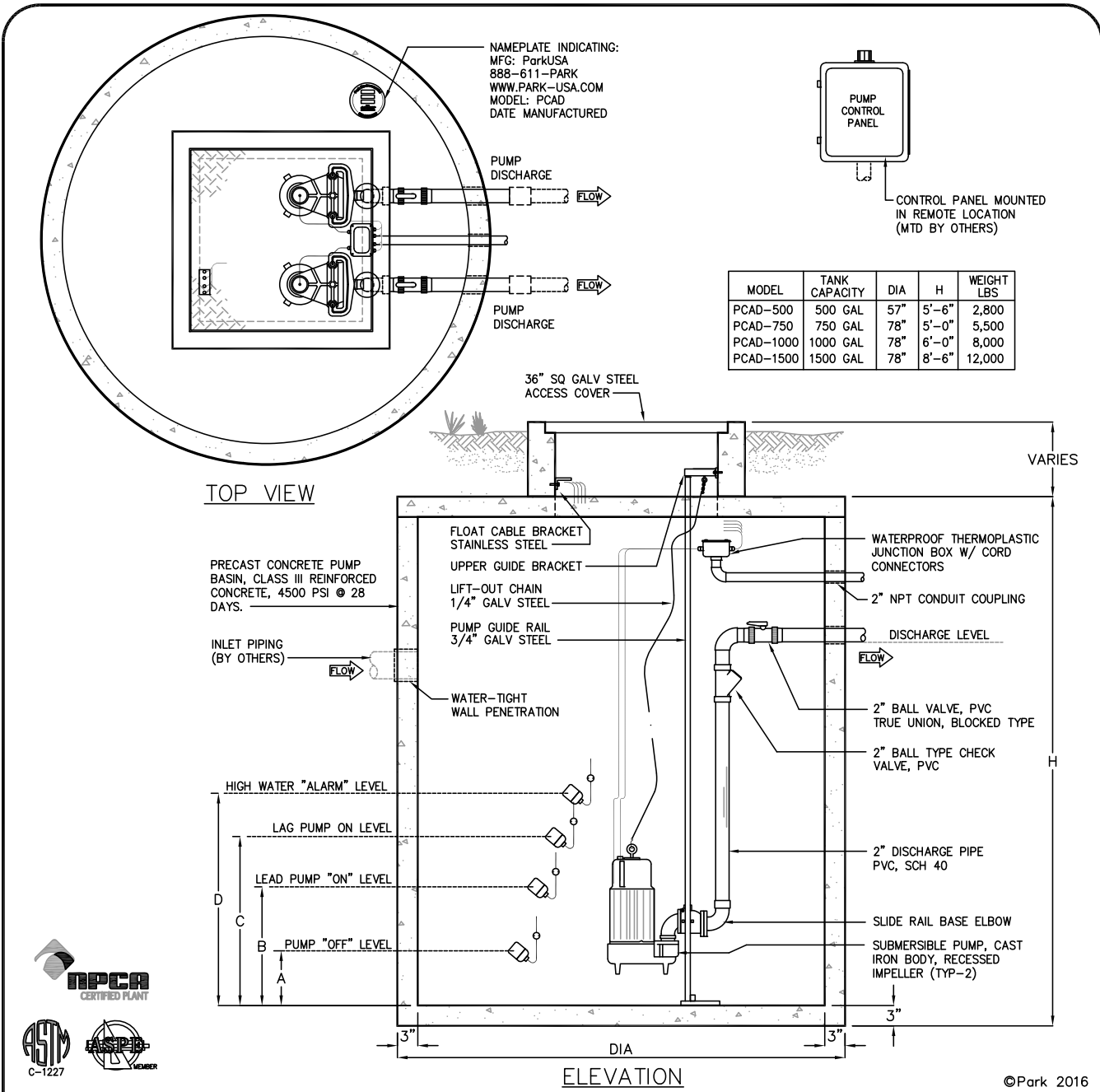
SIZING

Since this is a special product that requires coordination and careful review of different variables involved, it results complex to establish a standard chart with model and size. ParkUSA offers assistance with the complete design and specifications for this product.

MAINTENANCE

The anaerobic system unit should be inspected periodically for any accumulation that could occur during normal operation. In the unfortunate event of spill, the unit should immediately be serviced to remove hazardous material.

When necessary, the unit should be pumped out by a licensed pumping company familiar with regulations regarding proper disposal.



Specifications

PUMPS: Pumps shall be centrifugal solids handling type with submersible type motor. Pumps shall have a capacity as follows:

PUMP No.	TYPE	GPM	TDH	RPM	ELECTRICAL			
					HP	V	PH	Hz

CONTROLS: Pump controls shall be mounted inside a UL Listed NEMA-4X enclosure and include circuit breakers, alarm circuit fuse, IEC rated motor starter, pump HOA, and alternator relay. Panel shall have a visual alarm becon. Panel is designed for remote mounting.

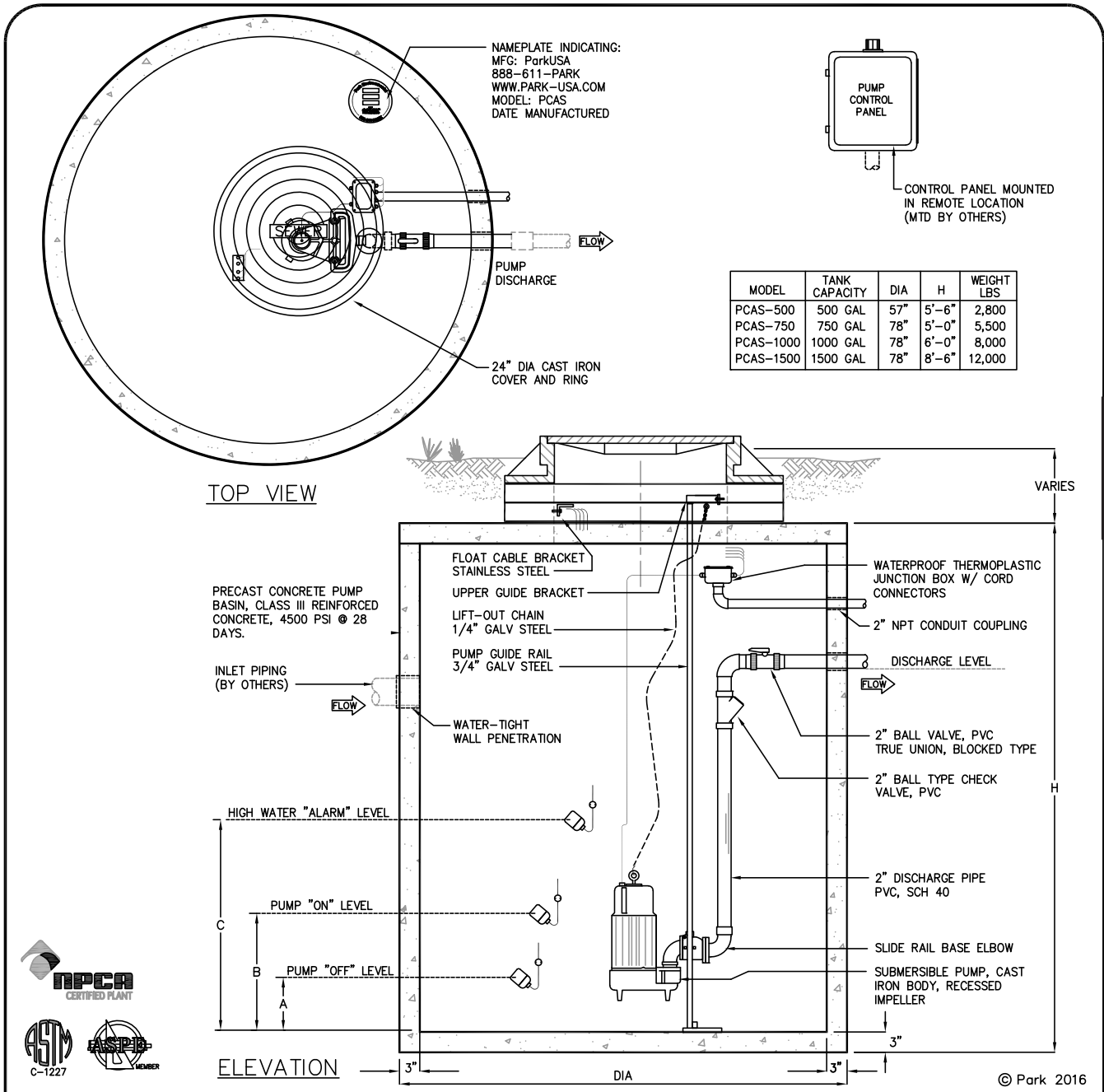
PUMP BASIN: Pump Basin shall be manufactured from reinforced concrete, Class III 4500 PSI @ 28 Days. Tank shall be designed in conformance to ASTM C-1227.

PROJECT : _____
 CUSTOMER : _____
 ARCHITECT : _____
 ENGINEER : _____
 ORDER # : _____ DATE : _____
 SYSTEM : _____



**DUPLIX SEPTIC PUMP SYSTEM
MODEL PCAD**

PM	DRN	CHK	DWG. NO.	REV.
DATE	04/16		PCAD-1	A



MODEL	TANK CAPACITY	DIA	H	WEIGHT LBS
PCAS-500	500 GAL	57"	5'-6"	2,800
PCAS-750	750 GAL	78"	5'-0"	5,500
PCAS-1000	1000 GAL	78"	6'-0"	8,000
PCAS-1500	1500 GAL	78"	8'-6"	12,000

Wastewater Systems



Specifications

PUMPS: Pumps shall be centrifugal solids handling type with submersible type motor. Pumps shall have a capacity as follows:

PUMP No.	TYPE	GPM	TDH	RPM	ELECTRICAL			
					HP	V	PH	Hz

CONTROLS: Pump controls shall be mounted inside a UL Listed NEMA-4X enclosure and include circuit breakers, alarm circuit fuse, IEC rated motor starter, pump HOA, and alternator relay. Panel shall have a visual alarm beacon. Panel is designed for remote mounting.

PUMP BASIN: Pump Basin shall be manufactured from reinforced concrete, Class III 4500 PSI @ 28 Days. Tank shall be designed in conformance to ASTM C-1227.

PROJECT : _____
 CUSTOMER : _____
 ARCHITECT : _____
 ENGINEER : _____
 ORDER # : _____ DATE : _____
 SYSTEM : _____



**SIMPLEX SEPTIC PUMP SYSTEM
MODEL PCAS**

PM	DRN	CHK	DWG. NO.	REV.
DATE	04/16		PCAS-1	A



Onsite Sewage Facilities

When a public sewer system is not available, a building sewer is required to have an on-site wastewater treatment system. Local and state authorities typically regulate on-site sewage treatment systems. There are two main types of on-site wastewater treatment systems:

1. Anaerobic - (no oxygen)
2. Aerobic - (oxygen using)

This document will discuss the typical aerobic treatment system. Aerobic treatment systems are also known as aerobic biological systems or package treatment systems. These types of systems treat wastewater better than the typical anaerobic septic systems. The aerobic system offers better solids separation and reduced sludge volume. The aerobic system produces high quality effluent, which can be disposed of through one of the following methods:

1. Conventional soil absorption beds
2. Drip irrigation
3. Above ground spraying

ONSITE SEWAGE FACILITIES-OSSF

WATER TREATMENT SYSTEM

Features

- OSHA manway access cover
- Chemical resistant tank construction
- Prepackaged system for easy specification & installation
- Maintenance notification system; alerts of tank full capacity
- Optional metering pump & controls



WW | ONSITE SEWAGE
Standard

How It Works

Aerobic Treatment System:

Septic / Pretreatment Tank: The septic or pretreatment tank should be constructed to maximize the amount of solids it separates. The tank can be single or double compartments and made of precast concrete (5000 psi@28 days). Adequate access must be provided to each compartment for easy accessibility, inspection, and cleaning. The septic/pretreatment tank shall be constructed in conformance to ASTM-C1227 and local/state requirements.

Aerobic Treatment Plant: The treatment plant is a pre-engineered treatment tank that utilizes aerobic (oxygen using) action to break down raw sewage. This system consists of a concrete or fiberglass mixing tank, an internal cone shaped settling chamber, and air injection equipment. The injected air enables naturally occurring bacteria to thrive and grow in much greater numbers than would occur naturally. This "overpopulation" of bacteria speeds the process of breaking down the sewage.

The raw sewage enters the mixing chamber where mixing occurs through an air distribution system. The solids remain in suspension with a general flow up the mixing tank wall and down the outside of the settling chamber. The mixed liquid then enters the settling chamber from the bottom. The settling chamber maintains a quiet condition that allows solids to settle down and re-enter the mixing chamber for more processing. The liquid is hydraulically displaced upward and is discharged as clear odorless treated water that meets or exceeds state water quality standards. Treatment tanks must meet stringent specifications and are ANSI/NSF 40 Certified and state approved.

Pump/ Dosing Tanks: The sewage discharge from the treatment tank gravity flows into the pump tank. The pump tank is constructed of concrete or fiberglass. The tank contains either one (simplex) or two (duplex) submersible pumps. When the level rises to a set level the pump(s) will pump the treated sewage to an absorption bed, drip irrigation field or above ground sprayers. The pump(s) is controlled with float switches, control panel and a timer.

Chlorinator: If the treated sewage needs further treatment, a chlorinator is employed to add small amounts of chlorine to the effluent. This chlorine will kill in remaining pathogens. The chlorinator is generally used for above ground disposal. The chlorinator uses chlorine tablets that are dissolved in the effluent flow stream.

Visit ossf.parkusa.com for more information and design assistance.

Anaerobic Treatment System:

The domestic sewage that discharges down the building sewer is composed of water and waste matter. There are two types of waste matter, suspended solids like coffee grounds and dissolved solids like sugar in coffee. This sewage will quickly clog all but the most porous gravel soil formations.

A major function of a septic tank is to remove as many solids as possible from the sewage. The out flowing liquid (effluent) will finally be distributed over an adequate area of land where it can be dispersed in a soil absorption field. The absorption field is usually a series of parallel trenches, each containing a distribution pipe embedded in drain field gravel. The effluent drains out through holes in the pipe into the gravel bed, and then into the soil. The soil filters remaining minute solids and pathogens (disease-producing microorganisms). Water and dissolved substances slowly percolate outward into the soil and down toward ground water or restrictive layer. Some of the water evaporates or is used by plants.

A second function of the septic tank is to treat the solids remaining in the tank with bacteria of the anaerobic species (only active in the absence of oxygen). Given enough time, these bacteria decompose the solids, and eventually make them stable. This decomposition or treatment of the sewage under anaerobic conditions is termed "putrefaction" or "septic" hence the name of the tank.

A third function of the tank is to store the solids. A rock is chemically stable, whereas an orange, for example, is unstable because bacteria and fungus can decompose it until it is stable and is no longer subject to bacterial action. This process of bacterial breakdown is called digestion. There are three layers in the tank. These include sludge at the bottom (heavier solids that have settled), scum at the top (fats and greases, light solids that have risen), and in-between, relatively clear sewage that still contains sugars, detergents, and other dissolved solids.

The anaerobic bacteria work in all three layers. These bacteria reduce the size and weight of the solids by turning a large part of them into liquids and gases. Thus, a pound of solids entering a tank may be only a fraction of the weight three months later. Every time raw sewage enters the tank, it forces an equal amount of treated sewage out of the tank. Septic tank tees or baffles prevent the sludge and top scum layer from exiting the tank with the treated sewage. The sewage effluent leaving the tank may still contain pathogens and are dispersed into the soil absorption drain field. Bacteria present in the soil carry out further digestion.

APPLICATIONS



Good to use
in BMPs



Commercial



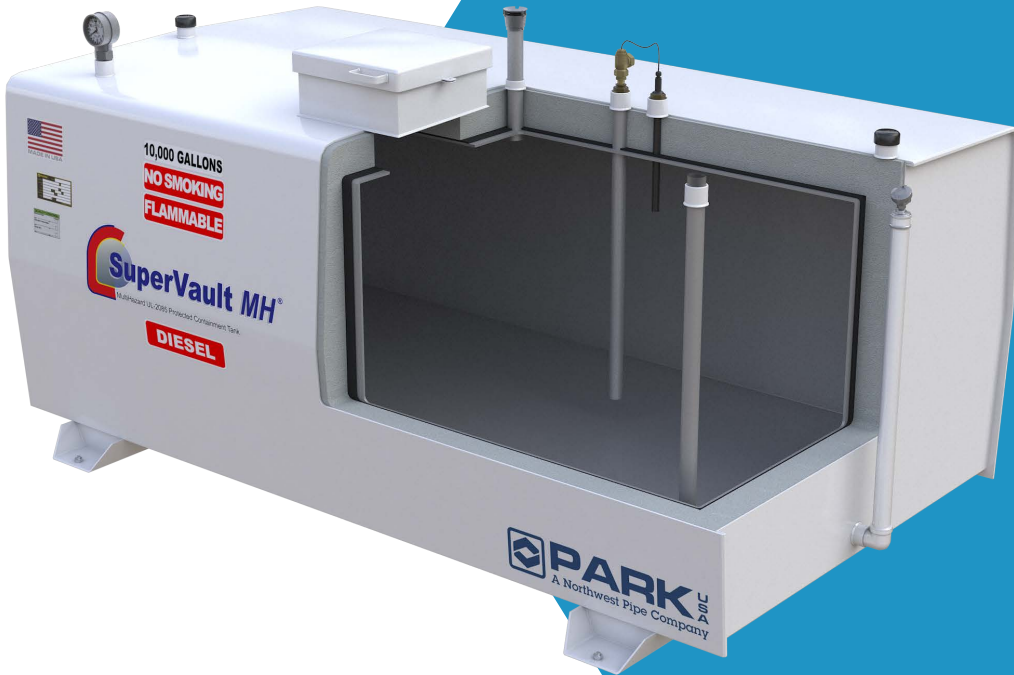
Residential



Hotels



Multi Story
Family Home



ENGINEERING
FACTS

GENERAL INFORMATION

The SuperVault MH is the first tank to pass the SwRI 95-03 Multi-Hazard test, the toughest national test for aboveground fuel tanks. Most tanks are single-hazard rated which means they can withstand a hazard (fire, bullet, impact) one time, but then have to be removed from service. The SuperVault MH has been tested for multiple exposure to fires and other hazards, plus an extended element exposure test. This means that if the SuperVault MH experiences a hazard, it may be re-certified and kept in service rather than having to be replaced.

In addition to SwRI 95-03, the listing includes a four - hour fire rating. It meets the stringent safety requirements of Uniform Fire Code Appendix Standard A-II-F-1 (UFC 79-7), SwRI Test Procedure 93-01, NFPA 30/30A, and UL 2085 Protected Tank and Interstitial Communication Test.

The SuperVault MH provides safe, aboveground storage, with the highest insulation value available in a lightweight concrete design. The unique design provides unsurpassed fire protection and ballistic resistance. Installation and handling is much easier than tanks encased in heavy weight concrete. Since the tanks are relatively lightweight, they can be shipped anywhere in the world.

SUPERVAULT MODELS



MH Series Cylindrical Tanks



MH Series Rectangular Tanks

The insulating concrete is protected from deterioration and damage by an additional outer steel tank. The MH Series is available in two styles, cylindrical and rectangular.

MODELS

The ParkUSA's SuperVault present two models, these are dictated by the type of configuration the containment tank may have.

MH Series Cylindrical Tanks:

Available from 250 gallons to 20,000 gallons, the cylindrical line of the MH Series offers two advantages to the fleet fueling operation: larger capacities and less wasted fuel in the bottom of the tank. For example, let's say a suction tube is cut 6 inches from the bottom of a fuel tank to avoid settling debris or water common with fuel storage. In a 12,000 gallon rectangular tank, the end user would have approximately 840 gallons of unusable fuel at 6 inches. At 6 inches in a 12,000 gallon cylindrical tank, the volume left is only 240 gallons. This means the owner of a 12,000 gallon SuperVault has 600 additional gallons, 71 percent more in the bottom 6 inches than larger rectangular ASTs.

MH Series Rectangular Tanks:

Rectangular SuperVaults are available from 250 gallons to 2,000 gallons. The advantages of rectangular designs are smaller footprints, less visual impact and simplicity in operating tank-top pumps and accessories.

The SuperVault MH is the first tank to pass the SwRI 95-03 Multi-Hazard test, the toughest national test for aboveground fuel tanks. Most tanks are single-hazard rated which means they can withstand a hazard (fire, bullet, impact) one time, but then have to be removed from service.

FEATURES

- 20 - Year Transferable Warranty
- Light Weight, Easy to Install and Relocate
- True "Field Testable" Secondary Containment
- High Impact Resistance
- True 110 percent Secondary Containment
- Four - Hour Fire Rating
- Bullet Resistance
- Only Tank Listed Reusable After a Hazard (subject to fire official inspection)
- Seismic Restraints Part of Every Tank
- External Diking Not Required by UFC

SYSTEM COMPONENTS

ParkUSA SuperVault presents a series of accessories which will vary in installation and requirement depending on the project characteristics. In this way, the most common accessories found in this type of units are:

- Spill Containment Basin
- Shut-off Device
- Overfill Alarm
- Pressurized Vent
- Electronic Leak Sensors
- Electronic High/Low Level Switches
- Remote Alarm Panel
- Emergency Vent
- Open Draft Vent Cap
- Pressure Vent Cap
- Sight Gauge
- Side Mount
- Submersible Pump
- Remote Dispenser

SIZING

The SuperVault sizing follows a series of steps in order to be sized. However, the unit is mainly based on volume contained. The first step is to determine the usage of the fleet by reviewing yearly fuel records. Or, on generator applications calculate the emergency power operational hours required for the facility.

In most cases, particular model fire codes are used to design any AST, the uniform fire code or NFPA 30 and 30A. These model codes spell out specific rules for tank construction, listings, distance requirements, maximum capacities, spill prevention, physical protection, etc.



Rectangular sizes from 250 gallons to 2,000 gallons

MODEL	SIZE IN GALLONS	OVERALL LENGTH	OVERALL HEIGHT	OVERALL WIDTH	APPROX. WT. (LBS)
MHR-D-250	250	7'-1"	3'-6"	4'-1"	4,150
MH-D5-500	500	6'-1"	4'-6"	6'-0"	5,650
MH-D5-1000	1,000	11'-1"	4'-6"	6'-0"	9,250
MH-D5-1500	1,500	11'-1"	4'-6"	8'-3"	11,600
MH-D5-2000	2,000	11'-1"	5'-7"	8'-3"	12,800

Cylindrical sizes from 250 gallons to 20,000 gallons

MODEL	SIZE IN GALLONS	OVERALL LENGTH	OVERALL HEIGHT	OVERALL WIDTH	APPROX. WT. (LBS)
MH-D1-250	250	6'-3"	4'-7"	4'-3"	3,700
MH-D1-500	500	10'-3"	4'-7"	4'-3"	5,400
MH-D1-750	750	14'-7"	4'-7"	4'-3"	7,400
MH-D2-500	500	6'-3"	5'-9"	5'-5"	5,100
MH-D2-750	750	8'-6"	5'-9"	5'-5"	6,500
MH-D2-1000	1,000	10'-11"	5'-9"	5'-5"	7,800
MH-D2-1500	1,500	15'-8"	5'-9"	5'-5"	10,600
MH-D2-2000	2,000	20'-6"	5'-9"	5'-5"	13,500
MH-D3-1000	1,000	7'-4"	6'-10"	6'-6"	7,600
MH-D3-1500	1,500	10'-4"	6'-10"	6'-6"	9,700
MH-D3-2000	2,000	13'-4"	6'-10"	6'-6"	12,000
MH-D3-3000	3,000	19'-3"	6'-10"	6'-6"	16,400
MH-D3-4000	4,000	25'-3"	6'-10"	6'-6"	22,600
MH-D4-2000	2,000	8'-6"	8'-5"	8'-1"	12,900
MH-D4-3000	3,000	12'-1"	8'-5"	8'-1"	16,700
MH-D4-4000	4,000	15'-9"	8'-5"	8'-1"	22,100
MH-D4-5000	5,000	19'-3"	8'-5"	8'-1"	26,000
MH-D4-6000	6,000	22'-10"	8'-5"	8'-1"	29,400
MH-D4-8000	8,000	30'-3"	8'-5"	8'-1"	37,300
MH-D4-10000	10,000	37'-11"	8'-5"	8'-1"	44,000
MH-D5-6000	6,000	13'-4"	11'-1"	10'-9"	28,800
MH-D5-8000	8,000	16'-3"	11'-1"	10'-9"	34,800
MH-D5-10000	10,000	20'-5"	11'-1"	10'-9"	41,500
MH-D5-12000	12,000	24'-0"	11'-1"	10'-9"	48,000
MH-D5-15000	15,000	29'-5"	11'-1"	10'-9"	55,600
MH-D5-20000	20,000	38'-8"	11'-1"	10'-9"	69,500



Fuel Tanks

The SuperVault MH is the first tank to pass the SwRI 95-03 Multi-Hazard test, the toughest national test for aboveground fuel tanks. Most tanks are single-hazard rated which means they can withstand a hazard (fire, bullet, impact) one time, but then have to be removed from service. The SuperVault MH has been tested for multiple exposure to fires and other hazards, plus an extended element exposure test. This means that if the SuperVault MH experiences a hazard, it may be recertified and kept in service rather than having to be replaced.

In addition to SwRI 95-03, the listing includes a four-hour fire rating. It meets the stringent safety requirements of Uniform Fire Code Appendix Standard A-II-F-1 (UFC 79-7), SwRI Test Procedure 93-01, NFPA 30/30A, and UL 2085 Protected Tank and Interstitial Communication Test.

Features

- Known for excellent service
- 20-Year transferable warranty
- Lightweight, easy to install and relocate
- Optional precast slabs customized for SuperVault
- Fleet of crane trucks for delivery & placement on slab
- True "Field Testable" secondary containment
- True 110 percent secondary containment
- Four-Hour fire rating
- Bullet resistance
- High impact resistance
- Seismic restraints part of every tank
- External diking not required by UFC
- Custom equipment packages factory installed - ready for use
- Only tank listed reusable after a hazard (subject to fire official inspection)



FT | SUPERVAULT
Standard



System Components

ParkUSA®'s SuperVault presents a series of accessories which will vary in installation and requirement depending on the project characteristics. In this way, the most common accessories found in this type of unit are:

- Spill Containment Basin
- Shut-off Device
- Overfill Alarm
- Pressurized Vent
- Electronic Leak Sensors
- Electronic High/Low Level Switches
- Remote Alarm Panel
- Emergency Vent
- Open Draft Vent Cap
- Pressure Vent Cap
- Sight Gauge
- Side Mount
- Submersible Pump
- Remote Dispenser

Models

The ParkUSA®'s SuperVault present two models, these are dictated by the type of configuration the containment tank may have.

MH Series Cylindrical Tanks: Available from 250 gallons to 20,000 gallons, the cylindrical line of the MH Series offers two advantages to the fleet fueling operation: larger capacities and less wasted fuel in the bottom of the tank. For example, let's say a suction tube is cut six inches from the bottom of a fuel tank to avoid settling debris or water common with fuel storage. In a 12,000 gallon rectangular tank, the end user would have approximately 840 gallons of unusable fuel at six inches. At six inches in a 12,000 gallon cylindrical tank, the volume left is only 240 gallons. This means the owner of a 12,000 gallon SuperVault has 600 additional gallons, 71 percent more in the bottom six inches than larger rectangular ASTs.

MH Series Rectangular Tanks: Rectangular SuperVaults are available from 250 gallons to 2,000 gallons. The advantages of rectangular designs are smaller footprints, less visual impact and simplicity in operating tank-top pumps and accessories.

Visit supervault.parkusa.com for more information and design assistance.

To request a quote or catalog, visit request.parkusa.com.

APPLICATIONS



General
Aviation



Good to use
in BMPs



Commercial



Industrial



Medical
Facilities



Service
Stations



FUEL SYSTEMS



SUPERVAULT



LIFT STATIONS



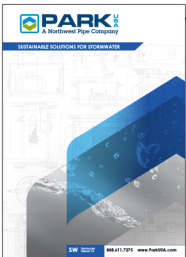
EFFLUENT | AXIAL PUMPS | VERTICAL TURBINES | NON-CLOG PUMPS | GRINDERS



PARK PROCESS



EDUCTORS | DEWATERING | FILTRATION | SEPARATION | MIXING/BLENDING



STORMWATER



DRAINAGE | MANAGEMENT | INTERCEPTORS | COLLECTIONS | QUALITY | RECYCLE



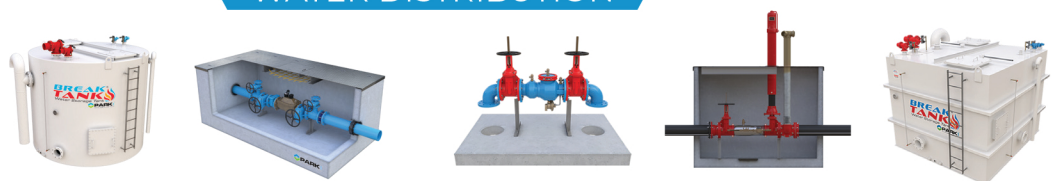
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